Draft Conservation Strategy for Montana's Wetland's

7/24/97

Note to readers of the 7/24/97 Draft Conservation Strategy for Montana's Wetland's.

This draft is a result of work by the Strategy Working Group of the Montana Wetlands Council. Comments were requested on the previous draft dated 4/29/97 which was sent to over 200 individuals on the Council mailing list. In addition, the May 14 Wetlands Council meeting was devoted to reviewing and discussing the draft. This draft, dated 7/24/97, is result of that input. The Working Group wants to emphasize that this document is still a draft. The next step is for the Wetlands Council to seek broad-based public involvement and comment. The Wetlands Council welcomes your help with public involvement. For information call Lynda Saul at the Department of Environmental Quality, 444-6652.

The purpose of the Conservation Strategy for Montana's Wetland's is to establish a framework to guide and facilitate the protection, conservation, and management of Montana's wetlands for present and future generations in partnership with private landowners, federal, tribal, state and local governments, economic interests and conservation organizations.

add Executive Summary

and Acknowledgments

I. INTRODUCTION

A. Wetlands - Vital Resources

Wetlands, like other natural resources, are vital components of the Montana landscape. Wetlands serve highly important ecological, economic, recreational, and aesthetic functions. In terms of human benefits, wetlands provide such functions as: flood water retention, trapping of sediments, water quality improvement, groundwater recharge, and recreational opportunities.

Wetlands also provide environmental benefits. Many Montana fish and wildlife species are wetland dependent. Threatened and endangered species such as whooping cranes, piping plover and bald eagles also depend on wetlands. Wetlands provide habitat for many freshwater fish and upland game birds and stopover feeding and breeding grounds for migratory waterfowl. Some of the nation's most valuable waterfowl production areas are the prairie pothole region of the northern Great Plains, including wetlands of northeastern Montana. As Montana's tourism industry becomes increasingly important, so do the state's wetlands for the extensive opportunities they provide for fishing, hunting, camping and viewing wildlife.

For many years, wetlands in Montana and around the nation were viewed as wastelands. With support and encouragement from the federal government, ranchers and farmers converted their marshes and wetlands to what were then deemed more "productive uses"-- pastures and croplands. No definitive assessment of the numbers of acres of wetlands converted to these and other uses has ever been completed. One commonly cited study (Dahl 1990) however, estimates that 27 percent of Montana's original wetlands have been lost since colonial times. Because wetlands comprise less than 1 percent of the total surface area of Montana, this loss estimate appears significant. The Montana Department of Health and Environmental Science biennial report (1982) to the U.S. Environmental Protection Agency stated, Precious little is known about Montana wetlands except that they are disappearing. The Montana Department of Fish, Wildlife and Parks agrees, and forecast in 1992 that ...a continuing general decline in the wetland base in the State appears most probable. Despite laws enacted to protect them, Montana wetlands continue to be lost and degraded each year. In addition, considerable pressure is exerted on wetland functions and values which adds to the decline and degradation of Montana's wetland base.

The intrinsic value of wetlands were not recognized until their loss started to reveal problems. For example, sportsmen gradually began to notice a decline in the numbers of fish and wildlife. Flooding along rivers and shorelines increased over historical levels. The public has begun to recognize that wildlife habitat, water pollution control, groundwater recharge and flood control were direct benefits of wetland preservation. With this recognition has come an expanded interest in protection, conservation, and management of Montana's remaining wetlands.

Wetlands are affected by a variety of activities such as filling, excavating, clearing, draining, flow modification, flooding, contamination and other activities. There is not a single federal,

state, local or tribal program that addresses all activities that affect wetlands. Existing wetland protection and conservation programs are limited in scope, do not address all problems, are not well coordinated, and are often hindered by insufficient data and information.

B. Strategy Purpose and Guiding Principles

The purpose of the Montana Wetlands Conservation Strategy (Strategy) is to establish a framework to guide and facilitate the protection, conservation, and management of Montana's wetlands for present and future generations in partnership with private landowners, federal, tribal, state and local governments, economic interests and conservation organizations. The Strategy purpose is based on the recognition that healthy wetlands are important to present and future generations of Montanans and that maintaining fully functioning wetlands should be a conservation priority.

The Montana Wetland Conservation Strategy has been designed to be a comprehensive, flexible guide for use by wetland managers, landowners, private industry and conservation organizations to foster responsible wetland stewardship and wetland conservation. Implementing the Strategy requires shared vision, intelligent resource based planning, long-term commitment, and consistent cooperation, coordination, and communication. The Strategy also recommends specific wetland conservation activities and sets priorities for implementation. The Strategy was developed with the following guiding principles:

- Wetlands provide important functions and benefits to society and should be conserved for future generations.

- Wetland conservation efforts should be practical, flexible, and creative, while allowing for economic growth and development when possible.

- Wetlands education and public outreach should be conducted in a clear, understandable and balanced manner to provide information and increase public awareness of wetlands issues.

- The best scientific information available should be used to promote understanding of wetlands and to improve wetland decision making.

- Public agencies should coordinate their efforts, eliminate duplicative efforts, make efficient use of funds and staff, and promote consistent policies and programs.

- Cooperative voluntary conservation efforts should be promoted to conserve, protect, restore, enhance, and manage privately owned wetlands.

- Existing successful wetlands protection and conservation programs should be supported, and partnerships with private conservation efforts should be promoted rather than development of new governmental programs.

- Wetland planning should be integrated with other local, state, tribal and federal planning efforts wherever possible.

- Where unavoidable impacts to wetlands occur, wetland replacement and/or restoration should be promoted within the watershed and monitored to ensure that lost wetland functions and values are recouped.

- Although accurate information on the amount of wetlands lost in Montana is unavailable, it is recognized that significant losses have occurred (Dahl 1990). Wetland conservation efforts should be promoted to prevent additional losses, and wetland restoration and creation should be promoted to compensate for losses.

* Existing native wetlands should be given conservation priority over restored, enhanced or created wetlands because native wetlands have higher high biological diversity than restored, enhanced or created wetlands.

C How the Strategy Was Developed

The Montana Wetland Conservation Strategy is the work of the Montana Wetlands Council. The Council was formed in 1994 following a "Wetlands Summit" workshop in Helena on September 12 and 13. This workshop was held to bring together a broad cross-section of Montanans to discuss issues and concerns related to wetlands. Two days of discussion and brainstorming resulted in the formation of the Wetlands Council to serve as a forum to bring people together with divergent interests in wetlands to work together toward responsible wetland stewardship. The Wetlands Council has continued to meet several times a year and developed a mission statement:

> The Montana Wetlands Council is a forum that promotes cooperative wetland resource management in Montana. Our mission is to develop a Strategy and coordinate efforts to protect, conserve, and enhance Montana wetland resources for present and future generations. We support environmentally responsible wetland resource stewardship through the cooperation of public and private interests.

Membership in the Council is open to anyone with an interest in wetlands issues, consisting of citizens, agency representatives, development and agricultural interests, industrial groups, consultants, and conservation groups. The Council's mailing list includes over 200 individuals and organizations. Council members volunteered to participate on seven work groups to address specific wetland issues, including education, data management, mitigation, classification and definition, policy, coordination, and regulatory requirements. In September 1996, Council members volunteered to form a Strategy Work Group to integrate the work from the seven other work groups into a coordinated, comprehensive Strategy which was presented to the full Council for discussion and revision.

Identifying and documenting Montanan's concerns about wetlands was considered fundamental to developing a useful wetland conservation strategy. In addition, the Council recognized that development of a wetland strategy must involve the people who will implement the recommendations as well as the people who will be affected by its implementation. Therefore, the Montana Wetlands Council surveyed a broad cross-section of over 70 Montanans representing agricultural, mining, environmental, hunting and fishing and development interests, and local, state, tribal and federal agencies. The Council also identified issues and concerns relating to wetland conservation in Montana.

Given the complexity of wetland ecosystems and the controversies surrounding wetland issues, it is not surprising that the list of issues and concerns identified by Montanans is long and varied. The major wetland issues and concerns were grouped into eight categories. These issues and concerns formed the basis of the Montana Wetland Conservation Strategy and are summarized in the box below.

WETLAND ISSUES AND CONCERNS IDENTIFIED BY MONTANAN'S

Policy Issues and Concerns

- Need for unifying state wetland goals.
- Concern that protection of wetlands will interfere with reasonable development.
- Concern that protection of wetlands will take agricultural land out of production.
- Concern about the impact regulations and other management activities have on private property rights.
- Concern that public agencies will bow to political pressure and not do what is needed for wetland conservation.
- Need to balance such public interest factors as conservation, economics, aesthetics, wetlands protection, cultural values, navigation, fish and wildlife values, water supply and water quality, and private property rights.

Planning Issues and Concerns

- Need for a comprehensive statewide plan to guide wetland conservation efforts.
* Need to integrate wetland conservation into local city and county planning efforts.

Coordination Issues and Concerns

- Need for coordinated effort among conservation organizations, governmental and tribal agencies, and private landowners to attain common wetland goals.

Regulatory Issues and Concerns

- Montanans raised a host of concerns with current state and federal wetland conservation regulations from a diverse array of interests - from regulations being too strict to not strict enough, inconsistencies in enforcement to too little enforcement, and problems with the permitting process including length of time and complexity of permitting process.

- Different definitions used in different situations cause confusion and misunderstandings.
- Need to identify and agree on different wetland types in Montana.
- Need for a comprehensive mitigation program including development of a wetland banking system and establishment of guidelines for adequate mitigation and a monitoring and compliance program.
- Need to identify existing state and federal wetland rules, regulations and programs and identify those which may unintentionally contribute to wetland loss.

Voluntary/Non-regulatory Issues and Concerns

- Need for positive incentive programs for private landowners rather than additional rules and regulations.
- Need for wetland restoration, enhancement, creation and acquisition programs.

Data Collection and Information Management Issues and Concerns

- Concern regarding the lack of data to assess existing wetland conditions and cumulative impacts.
* Need to evaluate effectiveness of current wetland conservation efforts.
- Need to identify high value wetland systems and prioritize conservation efforts.
- Concern about the rate and amount of wetland loss and degradation of wetlands.

Education Issues and Concerns

- Need among different segments of the public for knowledge and appreciation of the critical functions of wetlands.
- Concern that there is a lack of knowledge of what activities are allowed and what activities require permits in wetlands.

Monitoring and Evaluation Issues and Concerns

- Concern that there is insufficient monitoring to determine if existing programs are meeting wetland goals.

II. BACKGROUND

A. What is a Wetland?

A farmer's definition of a wetland, just after his tractor has sunk to its axles in the muck, obviously would be different from that of a school teacher presenting the values of wetlands to a class. Each wetland is unique. Wetlands include: marshes, swamps, potholes, wet meadows, fens, impoundments, ponds, and sloughs. Wetlands can be present in many settings including: riparian areas, flood plains, and upland forested areas. Some wetlands hold fresh water, some are saline, and others are created by underground water that is very close to the surface. Wetlands can be vegetated or nonvegetated. They are wet long enough and often enough to have unique natural functions, though they can be dry part of the year.

Because wetlands occupy the transitional areas between open waters and dry uplands, wetlands could be considered "fringe environments." As described by R.L. Smith (1980), wetlands are a halfway world between terrestrial and deepwater aquatic ecosystems and exhibit some of the characteristics of each. Basically wetlands form part of a continuous gradient between uplands and open water. They may be bordered by both wetter areas (deepwater habitats) and by drier areas (non-wetlands). As a result, in any definition the upper and the lower limits of wetlands has arbitrary boundaries. Consequently, few definitions adequately describe all wetlands. In fact, the introductory statement of Cowardian and others (1979) remains a challenge:

> There is no single, correct, indisputable, ecologically sound definition for wetlands, primarily because of the diversity of wetlands and because the demarcation between dry and wet environments lies along a continuum. Because reasons or needs for defining wetlands also vary, a great proliferation of definitions has arisen including structural attributes, functional considerations, and jurisdictional criteria.

Despite the difficulty defining wetlands, they generally have the following characteristics:

- Water on or near the surface, all or part of the year.
- Distinctive poorly drained soils that develop certain physical characteristics due to the presence of water (referred to as hydric soils).
- Vegetation composed of species (referred to as hydrophytes) adapted to life in wet soils.

Wetlands are identified for various legal, scientific and economic purposes, including regulation, functional assessment, ecosystem and landscape management, and human use. In general, wetland definitions have evolved from two main sources; the general public and entities which have a regulatory responsibility relating to wetlands. In regulatory programs, wetland definitions and delineation are usually interpreted conservatively. In an ecosystem context, such as wetland habitat assessment, a broader interpretation is needed. The intent and purpose of a wetland definition is fundamental to its interpretation and application.

Federal government agencies; the U.S. Fish and Wildlife Service, Environmental Protection Agency, Corps of Engineers, USDA Natural Resources Conservation Service (previously Soil Conservation Service) have developed their own wetland definitions. This led to significant confusion between the agencies and the regulated public. The federal government recognized this situation and in response developed a universal definition and means of identifying and delineating wetlands. The definition is based upon: hydrology, soils, and vegetation.

The 1987 Wetland Delineation Manual describes the process that is used to determine whether a site meets the requirements to be defined as a wetland in accordance with federal regulation. The manual, written by COE, is used by EPA, COE, NRCS and USFWS. The 1987 Manual is used when a wetland delineation is required. If a site meets specific vegetation, soils and hydrologic criteria then it is considered a federal jurisdictional wetland. (For more detailed information see Appendix H). The 1987 manual definition of a wetland is:

> Wetlands are those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes bogs and similar areas.

Montana Wetland Types

Wetlands vary in type according to differences in local and regional hydrology, vegetation, water chemistry, soils, topography, and climate. The general wetland types in Montana are currently being defined by wetland scientists and wetland managers. Using a variety of classification systems, the following types occur in Montana.

1. Riverine - associated with flowing water of rivers and streams.
   - riparian areas
   - backwater sloughs
   - spring-fed creeks
   - wet, low-lying river margins

2. Depressional - low spots on the landscape.
   - saline
   - glacial potholes (intermountain and prairie)
   - ephemeral ponds
   - wet meadows

3. Lacustrine Fringe - associated with lakes or deepwater habitat.
   - mudflat fringe
   - lake, reservoir and pond margins

4. Slope - groundwater discharge areas on a topographic gradient.
   - wet meadows

- subalpine/montane
- fens
- springs/seeps

5. Artificial - supported hydrologically by human-related activities.
- irrigation-supported
- transportation corridor-related
* livestock impoundments

B. Functions and Benefits of Montana Wetlands

Wetlands serve highly important ecological, economic, recreational, and aesthetic functions. In Montana, wetlands mitigate flood impacts, enhance water quality, improve biological productivity, increase recharge of ground water and provide direct human benefits. These benefits are described below:

FLOOD IMPACT MITIGATION

Wetlands reduce the volume and physical energy of water by:

Flood Peak Reduction. Wetlands store large volumes of water during snowmelt and heavy rains, reducing storm peak runoffs and slowly releasing runoff over a longer time period. Drainage of wetlands and conversion to other land uses removes this "sponge" effect, causing rapid runoff in a short period which can intensify flooding and may result in stream channel instability.

Shoreline Stabilization. Wetland vegetation acts as a buffer which absorbs and distributes flood waters, slows water currents and dissipates wave energy, thereby lessening the potential for shoreline and floodplain erosion. The root systems of wetland vegetation bind the floodplain and shoreline soil to further resist erosive forces.

WATER QUALITY ENHANCEMENT

Wetlands enhance the physical and chemical condition of water by:

Pollution control. Wetlands provide retention for sediments and toxic substances. Suspended solids and chemical contaminants such as pesticides, petroleum and oils and heavy metals may be retained and deposited in a wetland. Deposition of sediments can ultimately lead to removal of toxins from the environment through burial or assimilation into vegetation. Microorganisms can further break down the pollutants into stable harmless components.

Nutrient Removal and Transformation. Wetlands act as natural water purification mechanisms. They remove silt and filter out and absorb nutrients such as nitrogen, phosphorus and potassium through oxidation, reduction, assimilation or other biochemical processes. In some parts of the nation, wetlands are sometimes

used in wastewater treatment.

BIOLOGICAL PRODUCTIVITY

Wetlands are the most biologically productive ecosystems on earth; they provide habitat that supports a diverse array of wetland-dependent species.

Waterfowl Habitat. Wetlands are vital to many species of ducks, geese, shorebirds and swans for nesting, food, and cover. They use specific wetland types during different life stages such as reproduction, molting, migration, and wintering. Over 12 million ducks nest and breed annually in northern U.S. and south-western Canadian wetlands. This area, which includes Montana, the Dakotas, and similar habitats in the Canadian prairies accounts for up to 70 percent of the continent's breeding duck population. As an example, waterfowl banded along Montana's Highline have been recovered in all four flyways, including locations in Canada, Mexico, and several Central American countries.

Wildlife Habitat. Wetlands provide habitat for numerous species of birds, mammals, reptiles, amphibians, fish, and shellfish. Depending upon the size of the wetland, the vegetative composition, and the requirements of the specific animal, wetlands can provide some or all of a species' life requirements. For example, dense vegetation of wetlands can provide important winter cover for both mammals and birds. Over 300 migratory bird species rely on prairie wetland habitats for breeding, feeding, and resting during migration and more than 50 percent of Montana's birds require wetland habitat.

Freshwater Fish. Nearly all freshwater fish require shallow water provided by wetlands at some stage of their lives for spawning, shelter from extreme environmental conditions, and feeding. Many wetlands, where connected with deepwater habitats, provide ideal fish brooding and rearing habitat. In Montana, wetlands provide important habitat for trout, bass, catfish, pike, bluegill, sunfish, perch and crappie.

Habitat for Threatened and Endangered Species. Almost 35 percent of all rare, threatened and endangered animal species in the U.S. are either located in wetland areas or are dependent on them, although wetlands constitute only about 5 percent of the U.S. land area. Protecting habitat for these species helps the recovery process for those listed and helps ensure that additional species do not become listed.

Rare Plant Habitat. Both of Montana's federally listed plant species occur in wetlands.

Nutrient Cycling. Wetlands enhance the decomposition of organic matter, incorporating nutrients back into the food chain.

DIRECT HUMAN BENEFITS

Several direct human benefits can be derived from wetlands and their functions:

Recreational Opportunities. Wetlands offer unspoiled, open space for the aesthetic enjoyment of nature as well as activities such as hiking, fishing, hunting, and photography. Montana residents spend countless hours reaping the recreational

benefits of wetlands.

Education Opportunities. Wetlands provide opportunities for nature study and developing knowledge, skills and childhood memories.

Agricultural Benefits. Wetlands provide water and forage for livestock; some wetland areas produce excellent hay crops.

Economic Benefits. Housing near water bodies and wetlands is more desirable and increases property values.

Wastewater Treatment. A few small communities in Montana use constructed wetlands for municipal wastewater treatment.

Property Damage Reduction from Floods. Wetlands store large amounts of water which moderate flooding and thereby can reduce property damage.

GROUNDWATER INFLUENCE

Wetlands influence shallow water aquifers within their vicinity by three processes:

Recharge Wells and Aquifers. Wetlands recharge groundwater by holding surface water long enough to allow the water to percolate into the underlying sediments and/or bedrock aquifers replenishing groundwater supplies.

Low Flow Augmentation. Wetlands release water to adjacent streams or water bodies during low periods of the year and during drought.

Groundwater Discharge Buffering. Wetlands enhance the quality of groundwater by acting as a natural biochemical water treatment system. Aquifers can be tapped for human consumption or irrigation.

III. DEVELOPING MONTANA'S WETLAND GOAL

Wetlands have recently become a controversial natural resource issue. Montanans depend upon opportunities for economic growth, the ability to grow food for an ever-increasing world population, and the ability to do these without undue restrictions of personal freedoms. At the same time, Montanans value the vast natural resources of their state and the state's constitution guarantees all citizens a clean and healthful environment. Today, the citizens of Montana face profound questions about future growth. The state's population is predicted to increase by 200,000 people in the next ten years, an increase equivalent to nearly four cities the size of Great Falls (U.S. Census Bureau 1996). The citizens of Montana have to make hard choices about how this growth will be balanced with the consumption or preservation of natural resources. The Conservation Strategy for Montana's Wetland's is intended to help move the discussion forward and present a comprehensive and balanced statewide strategy that recommends actions to conserve wetlands while at the same time allowing economic growth and respecting private property.

One of the first and most important steps in developing a wetland strategy is to establish an overall goal and then discuss, evaluate and recommend actions to achieve that goal. A goal should promote consistency, provide a benchmark for assessing progress, increase understanding of the issue, provide an underlying purpose for all activities carried out as part of the strategy, and help transcend changes in leadership.

A. National Perspective

Throughout much of U.S. history, wetlands were regarded as a hindrance to development, virtual wastelands with little economic value. Since European settlement, Americans have repeatedly enacted laws and devised programs that encouraged the filling, damming, dredging or draining of wetlands for economic purposes such as farming, water supplies, construction and waterfront development.

However, government policy is changing rapidly and dramatically. Wetlands are now recognized as valuable resources that support wildlife, purify polluted waters, check the destructive power of floods and storms, provide diverse recreational activities, and increase property values. President Carter in 1977 signed Executive Order (EO) 11990 which applies to federal agencies such as the Bureau of Land Management, Forest Service, and Bureau of Reclamation. EO 11990 specifies that lands meeting the definition of a wetland under the Clean Water Act and other federal and state laws, are subject to all applicable federal, state and local regulations. This means that when federal lands are proposed for lease, easement, right-of-way, or disposal to non-federal parties, special protective requirements for wetlands must be made part of the package.

Presidents Bush and Clinton endorsed a federal policy goal of preserving the remaining wetlands, No Net Loss. Recognizing the need to further efforts undertaken by previous administrations, the Clinton Administration, in 1993, proposed a comprehensive package of improvements to the federal wetlands program to reflect a broad-based consensus among federal

agencies. Entitled Protecting America's Wetlands: A Fair, Flexible, and Effective Approach," this comprehensive package contained five principles for federal wetland policy. From these principles a number of initiatives were developed with the intent to significantly reform federal wetland policy, while maintaining protection of this vital natural resource. This new attitude is reflected by three decades of federal and state laws and other programs that serve to preserve and protect remaining wetlands. (Table 1).

In 1989, Congress directed the Secretary of the Interior to determine the estimated total number of wetland acres as of the 1780s and the 1980s in the areas that now comprise each state (Dahl 1990). The resulting report concluded that the land area that now comprises the lower 48 continental states originally contained about 221 million acres of wetlands more than 53 percent of which was destroyed between 1780 and 1980. In the lower United States, only an estimated 104 million acres of wetlands remained as of the 1980s. During the 20 years from the mid-1950's to the mid-1970's, wetland losses averaged 458,000 acres a year. The losses are primarily attributed to agricultural conversion and urban development. As of 1990, it was estimated that only 95 million acres remain and wetlands continue to be lost at a rate of almost one-half million acres each year**.** This computes to an acre of wetland lost every minute. Well over half of the U.S. wetlands that existed in colonial times have vanished forever. While some trends are very subtle, the above data on wetland loss provides a clear indication that continued loss will jeopardize a valuable national resource.

Table 1. History of Major Wetland Regulations in the United States

1995	Wildlife Habitat Incentive Program
1993	Protecting Americas Wetlands: A Fair, Flexible and Effective Approach
1990, 1995	Wetlands Reserve Program
1989	North American Wetlands Conservation Act
1988	No Net Loss Policy
1986	Emergency Wetland Resources Act
1985, 1990 1996	Swampbuster provisions in the Food Security Act and subsequent Farm Bills
1977	Floodplain Management- Executive Order 11988
1977	Protection of Wetlands - Executive Order 11990
1976, 1990	Water Resources Development Act
1974	Federal Aid to Wildlife Restoration Act
1973, 1977	Flood Disaster Protection Act
1972	Coastal Zone Management Act
1972, 1982	Federal Water Pollution Control Act, amended to become the Clean Water Act Section 404 - dredge & fill permits Section 402 - pollution discharge elimination system Section 401 - water quality certification Section 303 - water quality standards

	Section 208 - water quality planning
1969	National Environmental Policy Act
1968	Land and Water Conservation Fund
1967	Fish & Wildlife Coordination Act
1934	Migratory Bird Hunting Stamp Act
1899	Rivers & Harbors Act

B. National Goal

A National wetland goal evolved during meetings of the National Wetlands Policy Forum. The Forum is a group representing all major interests in wetlands policy, including government, agriculture, industry, and environmental advocates. In November 1988, after examining the wetland issue for a year, the Forum published its final report. It recommended that:

> ...the nation establish a national wetlands protection policy to achieve no overall net loss of the nation's remaining wetland base, as defined by acreage and function, and to restore and create wetlands where feasible, to increase the quality and quantity of the nation's wetlands resource base.

This goal has driven the wetlands policy debate since that time. President Bush and President Clinton have endorsed the Forum's no net loss and long-term net gain goal (referred to as NNL). The National Governor's Association unanimously endorsed the NNL goal, and numerous states and several federal agencies and local governments have formally adopted NNL goals. The broad appeal stated by the Forum and others for adopting the NNL goal is that it is a fundamentally balanced goal. The NNL goal was adopted with recognition of the urgent need to stabilize the wetland base and eventually increase the nation's wetland base to replace some of the wetlands which have been lost in the last 200 years. The NNL goal acknowledges that some wetlands will be lost due to natural events and necessary economic development. Those working with this goal have determined that NNL can be achieved by avoiding and minimizing wetlands losses where possible, and where losses are unavoidable, replacing lost wetlands through wetland restoration, creation, or enhancement.

C. Montana's Wetlands - Status and Trends

Montanans' uses of wetlands are similar to those revealed in national trends over the past 100 years. For many years, wetlands in Montana were viewed as wastelands. With support and encouragement from the federal government, ranchers and farmers converted their marshes and wetlands to what were then deemed more "productive uses"-- pastures and croplands. No definitive assessment of the numbers of acres of wetlands converted to these and other uses has

ever been completed. One commonly cited study (Dahl 1990), however, estimates that 27 percent of the state's original wetlands have been lost since colonial times. Because wetlands comprise less than 1 percent of the total surface area of Montana, this loss estimate appears significant.

Today, some agricultural producers marvel that wetland policy now aims to reverse the trend to convert wetlands for production and instead, protect, conserve and even restore areas previously deemed to be of little value. What explains this shift? Advances in scientific understanding of the many ecological functions that wetlands provide and changing social values emphasizing environmental protection, are two major forces that have prompted a redirection in government policies toward wetland conservation, protection and restoration.

It is now known that wetland loss and deterioration can be physical, chemical or biological. The major concern in Montana is physical loss of wetlands (MDHES 1982, 1988, 1992). Most Montana losses were due to conversion of wetlands to croplands, particularly in the prairie pothole region (USGS 1996). Additional losses of Montana's wetland base have been due to construction of highways, railroads, dams, large reservoirs and irrigation systems and urban expansion. Soil erosion and siltation, urbanization, recreational development, mining, logging, oil and gas production, and intensive grazing also have contributed to wetland loss in Montana (Hansen et al. 1988, MDFWP 1992, Windell et al. 1986).

Diminishing quality of Montana's remaining wetlands is also a concern. Fertilizers, pesticides, sediments, and salts from farms and ranches, brine from oil-field activities, and saline seeps induced by agricultural practices adversely affect the quality of water in some Montana wetlands (MDFWP 1992, Reiten 1992, Miller and Bergantino 1983). Cumulative losses are a significant concern to the overall function and distribution of wetlands in the state. To a farmer planting additional acreages, a local planning board, landowner, or Realtor planning or reviewing housing developments, or a construction firm building a highway interchange, the loss of a wetland or two in exchange for the benefits of development seems like a reasonable tradeoff. However, when these decisions are multiplied many times over and hundreds of wetlands are altered or lost, one at a time, the cumulative impact of wetland losses becomes significant.

Despite these trends in wetland losses and declines, a few positive steps are being taken. The national rate of wetland loss has slowed since protective legislation and educational programs were implemented in the mid-1980s (Dahl et al. 1991). Swampbuster provisions in the 1985 and 1990 Farm Bills denied crop subsidy benefits to farm operators who converted wetlands to croplands after 1985. The new legislation, private individuals and organizations and government agencies have all contributed to the creation, restoration and protection of some wetlands in Montana. Further, the construction of irrigation systems and reservoirs for livestock watering, especially in eastern Montana, has improved waterfowl production and has contributed to the wetland base (MDFWP 1992). However, these positive steps are only a beginning. To reverse the trend of wetland loss in Montana will require a collaborative effort.

D. Montana's Proposed Wetland Goal

The Conservation Strategy Working Group of the Wetlands Council has adopted the national wetland goal as a proposed goal for Montana. The proposed goal is supported by Governor Racicot as a balanced and appropriate goal for Montana.

The proposed wetland conservation goal for Montana is to build a wetlands conservation program to achieve no overall net loss of Montana's remaining wetland base, in terms of quantity and quality, to conserve, restore, enhance and create wetlands where feasible, and to increase Montana's wetlands resource base.

The broad appeal of the no net loss and long term net gain goal is that it is a fundamentally balanced goal. It recognizes the urgent need to stabilize and eventually increase Montana's wetlands inventory, while acknowledging that some wetland losses are inevitable because of natural events and legitimate development needs. It recognizes that wetlands should be evaluated in terms of functions they perform in addition to acreage they occupy. It recognizes that conservation, restoration, enhancement and creation of wetlands where feasible including respecting private property rights are reasonable management approaches to wetland conservation. And it recognizes that the long-term goal requires replacing some of the wetland losses in Montana.

The Working Group recognized that a comprehensive approach involving all components of wetland conservation and management is vital to the success of achieving the proposed goal. To that end, the following five objectives necessary to meet the proposed goal were identified:

1. Improving the wetlands knowledge base.
2. Encouraging voluntary conservation on private land.
3. Enhancing conservation on public land.
4. Providing resources: information and education, technical assistance and funding.
5. Improving regulatory program effectiveness.

Background information and specific recommendations to achieve the above objectives are described in Chapter IV.

IV. STRATEGY RECOMMENDATIONS TO ATTAIN MONTANA'S GOAL

This Chapter describes the five objectives and specific recommendations needed to meet Montana's proposed wetland goal identified in Chapter III. Some of the recommendations are intended to improve the effectiveness of existing programs or to strengthen coordination and cooperative action. Other recommendations are for new initiatives or programs which are needed to meet the proposed goal. Carrying out these recommendations is expected to result in significant progress in conserving Montana's wetlands and achieving Montana's proposed wetland goal. The recommendations are intended to lay the foundation for long-term, sustainable, coordinated wetland conservation with broad public support

Each recommendation is accompanied with information supporting its importance and relating back to the wetland issues and concerns raised by Montanans and highlighted in the box on pages 4 and 5. The Wetlands Council will seek public comment and involvement on the entire Strategy including the suggested recommendations and additional recommendations. The Council will prioritize recommendations, identify agencies bearing primary implementation responsibility, and list cooperating agencies and organizations, potential funding and other needed resources. This information will be provided in Appendix J, Wetland Strategy Implementation Chart, as part of the final Conservation Strategy.

Objective 1. Improving The Wetlands Knowledge Base.

Objective 1A. Inventory the State's wetlands.

Background

Information on Montana's wetlands is limited. In general, little is known about the location or nature of wetlands in Montana, what wetlands are being lost or gained and other basic questions. A sound inventory of the state's wetlands is vital to wise resource management for both voluntary and regulatory programs. Without an inventory, Montana lacks the ability to track wetland losses and gains, assess how well the state's wetland goals are met, and determine the effectiveness of the Conservation Strategy.

Recommendation #1

Endorse and facilitate the completion of a voluntary baseline wetland inventory, such as the non-regulatory National Wetlands Inventory for Montana.

Montana does not have a statewide inventory of wetlands. Without such a comprehensive inventory, neither managers, regulators, nor the public will be able to measure the success of wetland conservation and protection efforts. Montana's inventories should be performed to rank individual wetlands and wetland areas in terms of conservation values.

Recommendation #2

Establish and coordinate a wetlands tracking protocol to track wetland losses and gains for local, state, tribal and federal jurisdictions which includes a reporting requirement for approved wetland permits.

Currently, the state has no centralized wetland tracking system and does not track wetland losses and gains. As a result wetland losses and progress in meeting wetland goals are difficult to determine.

Recommendation #3

Establish a voluntary Montana Wetland Information Clearinghouse at the Montana State Library, Natural Resource Information System.

Currently there is no centralized, accessible source for information on Montana wetlands. Improved public access to information is essential for increasing the awareness of wetland issues and concerns. Inventories, projects, and programs for the purpose of wetland conservation all require accurate and relevant information. Use and sharing of data are equally important to research and the collection of new data. Accurate reports on the status of Montana's wetlands are only possible with reliable public access to verifiable information.

Recommendation #4

Establish a wetland monitoring program.

Wetland monitoring is needed to determine if a wetland is changing, or if wetlands that have been created, enhanced or restored are performing the way they are expected to, and to determine if management actions (such as revegetation, preservation) have the desired result. Effective management of wetlands is important for ensuring that the quality and quantity of wetlands are sustained and improved.

Objective 1B. Encourage research to add to the wetlands knowledge base.

Background

Sound research on wetlands provides important information on which to base wetland protection policies and programs. Such research should cover wetland functions, techniques for wetland restoration and creation to offset losses, and other related topics. Federal, state, and local agencies conduct wetlands research on their own and also provide support to research organizations.

Recommendation #5

Search for additional funding sources for wetland research.

Current programs for funding wetland research include the EPA's Wetlands State Development Grants and Non-point Source Pollution Prevention Programs. Additional funding should be sought to expand wetland research in Montana.

Recommendation #6
Establish a process to discuss and recommend wetland data collection, research and information priorities and needs for Montana.
A comprehensive evaluation of research needs will help direct limited funding to the highest priorities.

Recommendation #7
Conduct a study to analyze the comparative economic costs and benefits of conserving wetlands in Montana.
Wetlands have been identified as highly valuable resources, yet at the same time they are seen as a hindrance to economic prosperity. A balanced study evaluating the economics of wetlands in Montana would help to lay a foundation for wetlands discussion.

Objective 1C. Identify unique, high-quality wetlands.

Background
Limited information is available on exceptional wetlands in Montana. Certain unique, high-quality wetlands deserve a higher level of protection because of the public benefits and ecological functions they provide. Conservation of unique high-quality wetlands should be given greater emphasis and recognition than preservation of restored, enhanced or created wetlands.

Recommendation #8
Identify, determine the functions and values of, and prioritize unique exceptionally high quality wetlands for protection.

Recommendation #9
Develop a coordinated and prioritized program for wetlands conservation, protection, and acquisition using available funding programs and sources.
A coordinated approach should help ensure that priority wetlands are identified and protected through voluntary efforts.

Recommendation #10
Develop criteria for wetlands or candidate wetlands for designation as Outstanding Resource Water in accordance with Montana Nondegradation Rules (ARM 16.20.707(18)).
Outstanding Resource Water's (ORW) includes state waters within national parks, wilderness areas and primitive areas, and can include state waters that have been identified as possessing outstanding ecological significance and been classified as ORW. Designation of wetland with outstanding ecological significance could be used to protect such wetlands.

Objective 1D. Better define no overall net loss and long term net gain .

Background

No overall net loss and long-term net gain can mean different things to different people. Establishing a procedure for determining and defining net loss and long term net gain of wetlands will serve to more clearly define Montana's goals and ensure that progress in attaining those goals can be measured.

Recommendation #11

Develop guidance to better define no overall net loss and long term net gain of the remaining wetland base in Montana.

This recommendation would resolve issues such as a definition of no overall net loss and long term net gain, would provide a time line and possible quantification of a net gain goal, and develop a tracking system to determine how well we're meeting the no net loss and long term net gain goal.

Recommendation #12

Establish specific protocols for determining thresholds for cumulative impacts of wetlands to determine if a loss of wetland function or value has occurred.

Wetland loss can occur by incremental degradation and deterioration to the extent that the wetland no longer function.

Recommendation #13

Define the strategy in which, over the long term, loss of wetland area or functional capacity is offset by gains due to wetland restoration, enhancement, preservation, or creation.

Recommendation #14

Decide on the types and functions of wetlands that can be created or restored to compensate for loss of similar wetland types and functions and determine the geographic area where these efforts should be undertaken.

Recommendation #15

Develop an interim plan and a long-term plan indicating steps that need to be taken to achieve a net gain of wetlands in Montana.

Objective 2. Encourage Voluntary Conservation on Private Land.

Background

Cooperative, voluntary, non-regulatory mechanisms are likely to provide the greatest opportunity for wetland conservation activities in Montana. Unlike regulatory activities such as permitting, non-regulatory actions are voluntarily initiated. Voluntary actions can include a wide range of options and can be very successful in advancing wetland conservation goals. These voluntary actions can complement and enhance the effectiveness of regulatory programs by targeting activities or types of wetlands not covered by regulatory programs. For numerous reasons, voluntary programs are an important component of an overall wetland conservation strategy and play a critical role in wetlands conservation:

* A majority of wetlands in Montana are on private lands.
* Regulatory actions entailing case-by-case permit management do not provide flexibility in determining the type or location of wetlands to be addressed.
* Case-by-case regulatory permit programs do not provide for holistic watershed considerations or cumulative impacts in designing mitigation.
* Regulatory based mitigation frequently is constrained by a lack of suitable land and water and is not always successful. Studies show that successful mitigation is accomplished in only one out of three attempts at replacing lost wetland functions.
* Regulatory programs address only specific types of wetland alterations, such as dredging or filling, and wetlands under review for dredge and fill do not include riparian areas.
* Small wetlands often fall through the cracks of many regulatory programs and voluntary efforts often are better for managing small wetlands.
* Regulatory programs include little or no incentive for wetland stewardship.
* Some regulatory programs do not require tracking wetland losses.
* Regulatory programs provide no means of attaining long-term net gain of wetlands.

Objective 2A. Encourage voluntary measures to protect, conserve, restore, enhance and create wetlands in Montana.

Background

Achieving a stable and eventually expanding wetland base requires significant effort beyond the regulatory programs. Voluntary measures can include protection and conservation of existing wetlands, the restoration and enhancement of degraded wetlands and the creation of new wetlands. The restoration of degraded wetlands and the creation of new wetlands are often associated with the mitigation requirements of regulatory programs. Beyond governmental regulatory programs however, broad nonregulatory voluntary programs often can increase or enhance the wetlands base, thereby playing an important role in a statewide strategy. Effective management of existing, restored and created wetlands also is important for ensuring that the quality and quantity of wetlands are sustained and improved over time. Private voluntary efforts

are critical to help maintain and increase the wetland base and should be encouraged and supported.

Recommendation #16
Identify, evaluate and promote existing voluntary, non-regulatory wetlands protection measures.
Many voluntary nonregulatory programs to aid wetland conservation and management are already in place. Descriptions of wetland programs available from federal, state, and local governments as well as those available from private conservation organizations and corporate interests are included in Appendix E. Information materials including public service announcements, computer based information, videos and printed materials should be developed to explain and promote these programs.

Recommendation #17
Work with and strengthen private efforts to voluntarily conserve wetlands including the work of individual private landowners, corporations, recreational, environmental, hunting and fishing organizations, concerned citizens, and private land conservation organizations.
Identify and publicize voluntary wetland conservation projects both in Montana and other states to provide as examples and encourage successful partnerships and projects.

Recommendation #18
Compile and evaluate information concerning existing voluntary restoration and compensatory mitigation projects to determine project successes. Use this information to encourage and direct future projects.
Identify existing successful partnerships among landowners, nonprofit organizations, corporations or government agencies to restore degraded or destroyed wetlands and evaluate opportunities for additional partnerships in Montana.

Objective 2B. Promote public/private, partnerships for on-the-ground wetland conservation.

Background
Partnerships are critical because of the shared responsibility for wetlands conservation and management among state and federal agencies, county and city planners, non-profit conservation organizations, corporations and ultimately thousands of private landowners who make day-to-day decisions about the management and use of wetlands.

Recommendation #19
Establish a voluntary wetlands directory linking private landowners desiring wetland restoration with parties who are required to restore wetlands as mitigation under the terms of a dredge and fill permit issued by the Corps of Engineers.
Several states use this voluntary approach as one option to match wetland restoration needs with

others desiring wetland restoration. A voluntary wetland directory could provide a win-win situation. It would enable a private landowner to restore a wetland at little or no personal cost, while the entity needing to make up wetlands losses through permitted action has access to potential restoration sites.

Recommendation #20
Identify and invite private industries to build wetland conservation partnerships with state, federal, and local conservation groups.
Many American companies have made land available and contributed substantial resources to create and improve wetland habitats. Montana industries that might be interested in partnerships should be approached.

Objective 2C. Initiate a private lands and property rights wetland working group.

Background
A majority of wetlands in Montana are on private land and private landowners are likely to identify both barriers to and practical suggestions for wetlands conservation on private land. Wetland conservation and private property rights are serious topics. Land owners, conservation groups, and regulators could benefit from honest discussions, evaluation and research into practical balanced solutions incorporating both reasonable wetland conservation and management and protection of private property rights.

Recommendation #21
Establish a private lands and property rights wetland working group made up of interested individuals and government representatives to identify issues and concerns related to private property and wetlands and make recommendations to the wetlands Council on wetlands conservation.
A private lands and property rights wetlands working group would provide a valuable contribution to help identify and resolve issues in the search for accommodation and balance between conservation of wetlands for public benefit and protection of private property rights.

Objective 2D. Research and develop incentives and disincentives.

Background
Both incentives and disincentives can be either financial or nonfinancial. Financial incentive programs encourage wetlands protection by offering landowners a financial incentive such as lower tax rate on property preserved for wetlands. Disincentive programs discourage the destruction of wetlands by providing landowners with a financial disincentive such as loss of

eligibility for government funds if a wetland is converted. Incentive and disincentive mechanisms usually are in the form of tax policies and subsidies. Incentives can be used to complement regulatory programs by targeting wetlands that are exempt from regulatory review such as small, isolated wetlands. Awards and recognition programs also serve as nonfinancial incentives, acknowledging exemplary land stewardship or conservation work.

Recommendation #22
Identify and evaluate opportunities to enhance voluntary wetland conservation on private lands through financial incentives and disincentives.
At least 20 states currently offer some form of property tax relief for landowners who preserve or protect wetlands. This recommendation could determine how such a program might work in Montana.

Recommendation #23
Evaluate use-value assessment options for local governments as a means to conserve wetlands through reduced tax burden on wetlands that produce less income than other more intensive land uses.
Several state that use this approach reimburse local governments for lowered property taxes that result from participation in incentive programs.

Recommendation #24
Develop a nonfinancial incentive awards program to recognize individuals, companies, or government agencies that have voluntarily protected wetlands.

Objective 2E. Promote and enhance acquisition and easement programs.

Background
Both public and private entities can protect wetlands by acquiring them or placing them in conservation easements. Protection can be achieved through a purchase of all or some property rights or through techniques such as donation or leases. Acquisition can be tailored to specific needs of the landowners and acquiring organization by using complete or fee-simple acquisition, which involves acquiring full ownership of the land and all the rights associated with the land, or partial acquisition, which involves acquiring only some of the rights as in a conservation easement. Voluntary acquisition programs can help resolve regulatory conflicts by offering incentives, for example, to developers to protect wetland areas or acquire wetlands on potential development sites. Easements can be used to ensure the protection of a resource while the landowner retains most of all other ownership rights. Acquisition and easement programs can be quite flexible and are available at the federal, state, local and private level.

Recommendation #25

Develop government partnerships with local land trusts to help publicize and encourage the use of such trusts in wetland conservation.
Local land trusts are private, nonprofit organizations devoted to the preservation of locally significant natural areas and open spaces. The trust receives land from individual landowners through gifts, donations and bequests or through purchase. A voluntary board of directors runs the land trust and membership is open to the general public. Montana has at least five local land trusts.

Recommendation #26
Evaluate federal, state, local and private land acquisition programs for increased wetland acquisition or easement opportunities.

Recommendation #27
Develop fact sheets on voluntary acquisition and easement programs available to private landowners.

Recommendation #28
Research and recommend opportunities to coordinate acquisition programs with other organizations and mechanisms such as tax incentives, planning and research.

Objective 3. Enhancing Conservation on Public Land.

Objective 3A. Evaluate wetland programs and policies on public lands.

Background

Montana has a vast amount of public land; nearly one third of the state is in public ownership. Many relatively new programs for wetland conservation and management have been established as the value and importance of wetlands were realized. However, until about the 1960's wetlands were considered waste lands and the government encouraged and financed programs to help drain and fill wetlands for more worthwhile purposes. Older government policies and programs which impact wetlands may not be in synch with current goals or have built in barriers to wetland conservation and sound wetland management.

Recommendation #29
Evaluate federal, state and local programs and policies to determine how and why wetland losses are occurring in Montana.

Recommendation #30
Evaluate federal, state and local programs and policies to determine what the barriers are to wetland conservation and make recommendations for change.
For example in the coal surface mining industry the rules direct companies to replace what existed, not to create wetland that did not previously exist. Mining companies have opportunities to create wetland and contribute toward the goal of net gain but are restricted because wetlands did not previously exist in the mining areas. Government agencies and industry are working to address this specific example, however, other similar situation likely exist and should be addressed.

Recommendation #31
Evaluate local waste water treatment programs and projects for wetland restoration and creation potential.

Recommendation #32
Make recommendations to include protection for all components of a healthy functioning wetland in conservation programs.
For example, while land acquisition or easement may protect wetlands from physical alterations, off-site impacts such as water pollution or water availability cannot be controlled by land acquisition alone.

Recommendation #33
Evaluate options for acquiring or monitoring water rights for wetlands on public lands.

Objective 3B. Identify opportunities for public participation.

Background

Public involvement is crucial to wise resource decisions. Many government actions require public involvement, but often the public is overwhelmed with the length of documents to review, unaware of the opportunity for public comment, or unaware of the potential impacts of the proposed action.

Recommendation #34

Identify opportunities and actively encourage public involvement in public land management decisions affecting wetlands.

Possibilities include a wetlands newsletter or computer site which identifies public land management decisions which affect wetlands. This could be regional based or state-wide.

Objective 3C. Create a wetlands on public lands working group.

Background

Federal and state agencies manage about 32.4 million acres of public land in Montana these agencies include the Forest Service, Bureau of Land Management, Fish and Wildlife Service, National Park Service, Bureau of Reclamation, Army Corps of Engineers, Montana Department of Fish, Wildlife and Parks, Montana Department of Natural Resources and Montana Department of Transportation. Some state or federal land is managed for specific purposes such as operating a dam for flood control and irrigation, while other lands are managed for multiple use. The public has a vital stake in how these lands are managed and can make an important contribution to wise land management.

Recommendation #35

Establish a Wetlands on Public Lands working group made up of interested individuals, lessees, environmental and government representatives to identify issues and concerns related to wetlands on public lands and make recommendations to the Wetlands Council.

A Wetlands on Public Lands working group could provide a valuable contribution to help land managers better manage public land for wetland conservation.

Objective 3D. Use planning as a tool to encourage wetland conservation.

Background

Planning should be part of all wetland conservation efforts. Comprehensive planning involves analyzing the needs of a particular area and setting goals or priorities for meeting those needs.

Plans are based on the past and present situation and, most importantly, on the desired future for the planning area. Coordinated, continuous planning should lead to better-informed decision making.

Recommendation #36
Encourage local governments to incorporate wetlands protection into public works, parks, local zoning ordinances, planning and development programs.
Local land use plans, watershed plans, open space planning, development of green belts, floodplain management, and local comprehensive land use plans are all tools for wetland conservation.

Recommendation #37
Build on federally required planning efforts to provide wetland conservation on public lands.

Objective 4. Providing Resources: information and education, technical assistance and funding.

Objective 4A. Increase wetlands information and education to local governments, land owners, industry, the public and schools.

Background

Public awareness and understanding of the importance of Montana's wetlands are critical if wetland conservation goals are to be achieved. Information materials can help people understand the functions and values of wetlands. Education, training and technical assistance can encourage citizens to conserve, protect and enhance these resources. The purpose of the Information and Education portion of the Montana Wetland Conservation Strategy is to facilitate development and dissemination of information materials and educational programs to build Montanans' capacities for informed stewardship of the state's wetlands over the long-term.

Considerable effort has been invested in wetlands information and education in Montana. One example is the Montana Riparian Education Committee, which has produced publications, workshops and videos to advance citizen knowledge and management of riparian areas in Montana. Wonder of Wetlands (WOW) workshops for teachers have been conducted and will continue to be available through Project WET Montana. Agricultural landowners and schools and organizations have participated in local wetlands restoration and education projects. Environmental organizations have provided information and resources to encourage wetlands preservation and protection. A Catalog of Wetlands Education Resources, which lists a wealth of wetland information, is available through the Montana Watercourse or the Natural Resource Conservation Service.

In spite of the availability of these materials and programs, there continues to be a need for balanced, factual information about Montana's wetlands. Local citizens and decision makers are sometimes uninformed and uncertain about the functions and values of wetlands. Landowners, developers and others can find permitting processes bewildering and frustrating. Resource professionals and agricultural producers seek information and technical assistance about best management practices and other wetlands issues. Local decision makers need technical training to enhance their knowledge of wetlands and to advance their capacities for informed decision making regarding wetland use and management.

Information and education are positive, non-regulatory steps to realize Montana's long-term wetlands conservation goals. They can prepare citizens for informed stewardship of wetlands. When delivered in appropriate ways to diverse adult and youth audiences, information and education may be the most enduring approach available to enhance Montana's wetlands for the long-term. Wetland information, training workshops and technical support in Montana are needed to:

- build broad public awareness of the benefits, functions and values of wetlands in Montana,
- describe and clarify wetlands permitting procedures and regulatory guidelines for specific audiences,
- inform Montanans of the Conservation Strategy for Montana's Wetland's and what it means to them,
- describe or view activities that are allowed in wetlands,
- address public concerns and dispel misconceptions about wetlands,
- promote cooperative, voluntary wetland enhancement, restoration and stewardship, and
- advance the capacity of landowners, decision makers and resource professionals to conserve and protect local wetlands.

Recommendation #38
The Education Work Group of the Montana Wetlands Council should develop a coordinated wetlands information and education effort.
Several wetlands information and education efforts are underway in Montana. A coordinated effort should include the following; compile existing wetlands education information and education opportunities; strengthen communication among groups and agencies involved in wetlands education; assess public perceptions, interest, knowledge and educational needs regarding wetland issues in Montana; identify deficiencies or gaps in existing education and information and evaluate the effectiveness of existing educational information for different audiences; develop an information and education matrix which identifies audiences, lead educators, types of education, advisors, and technical support, to facilitate coordinated wetlands information and training in Montana; identify new and improved ways to disseminate information.

Recommendation #39
Existing educational programs (for example MSU Extension, Montana Riparian and Wetland Association's Education Committee, Montana Watercourse, Project WET Montana) should continue to obtain, develop and distribute wetland information.
Wetlands information and educational needs are constantly changing as a result of factors such as new legislation and demographics. A landowner's guidebook on wetland permitting procedures and regulatory guidelines should be developed. Citizens need improved access to materials that clarify which activities are allowed in wetlands and which activities are not allowed.

Recommendation #40
Existing information and education programs should be encouraged to employ a variety of approaches to develop and deliver public information materials and training programs for multiple audiences statewide.
Employ multimedia and diverse approaches for wetlands information and education such as: Public Service Announcements for television and radio; brochures; booklets; videos; newspaper articles; workshops and tours; and demonstration projects.

Recommendation #41
Develop information identifying the value and functions of wetlands and importance of healthy wetlands.

Objective 4B. Provide Technical Assistance.

Background
Wetland science is a complex field which requires training in wetland plant identification, wetland soils and geology, wetland ecology and wetland bird and wildlife biology. The knowledge that state and federal government staff has acquired in wetland science should be used and shared among agencies and communities to further Montana's wetland goals.

Recommendation #42
When community or governmental organizations express interest, state and federal agency staff should provide assistance in the form of technical documents, information, financial support (through existing grant programs), and staff expertise. Agency staff should work in partnership with local groups to tailor activities to meet local conditions and needs.
Technical assistance and outreach encompass many options for wetlands protection at the local level. Federal and state agencies should be actively involved in promoting non-regulatory activities for wetland protection and make sure local governments and others are aware of technical and financial assistance which is available to them.

Recommendation #43
Provide technical assistance to alleviate river/stream flood flow peaks by promoting spring-time flooding of wetlands and fields to retain flood waters, and thereby also enhance wetland habitat and conserve soil moisture.

Objective 4C. Seek wetland conservation funding from a diversity of sources.

Background
The methods that local groups and the state can use to address wetland issues may be determined in large part by the funding available to implement the recommendations. In light of the tight fiscal constraint that most states face, nontraditional sources of funding are of growing importance. Money from these sources often is not specifically intended for wetland conservation.

Recommendation #44
Identify and publicize existing wetland conservation funding sources.

Recommendation #45

Prioritize wetland conservation needs and target the limited funding available to address these priorities.
For example, the Wetlands Council could issue request for proposals to interested applicants to address the top recommendations from the Conservation Strategy for Montana's Wetlands for EPA Wetlands State Development Grant funding.

Recommendations #46
Evaluate alternative financing sources to implement recommendations from the Conservation Strategy for Montana's Wetland's such as dedicated fees, taxes, fines and penalties, bonds, lotteries, voluntary contributions and trust funds.
These sources are being used increasingly by other states because unlike general revenues, they can be targeted directly at wetlands programs.

Objective 5. Improving Regulatory Program Effectiveness

Objective 5A. Improve coordination among regulatory programs and identify, assess and correct program inefficiencies, gaps and duplication.

Background

Increased coordination and evaluation of current policies and programs will lead to more effective wetland protection and conservation. Coordination and links among programs involves capitalizing on opportunities for enhanced wetland protection through a coordinated and complementary approach rather than working in isolation. Coordination helps to define conservation priorities, create better use of available finances, staff and expertise and can help minimize duplicative efforts and inconsistencies at all levels of government.

Recommendation #47
Evaluate opportunities to streamline regulatory programs.
For example, making application forms more user-friendly, shortening permit-processing time, providing helpful handbooks to guide citizens and consultants through the permitting process, installing special telephone-access service and database management systems to help applicants track the status of their permit applications, and establishing coordinated state-federal mitigation and permit-processing standards.

Recommendation #48
Increase coordination and links between non-regulatory and regulatory programs.
For example, high priority wetland sites which are identified for non-regulatory protection, restoration and enhancement actions also should receive consideration when mitigation is required under the regulatory process.

Recommendation #49
State and federal agencies should work toward a more coordinated approach to permit review and decision making.

Recommendation #50
Strengthen coordination and consistency of agencies with enforcement responsibilities.

Objective 5B. Develop guidelines to consistently apply wetland definitions, classifications and assessments in Montana.

Background

A consistent application of wetland definitions, classification and assessments of Montana wetland types and their function is needed for communication among users and agencies, mitigation and other wetland conservation purposes.

Recommendation #51
Determine the different uses and applications of different wetland definitions, classifications and assessments.
Different state and federal regulatory programs require the use of different methods for determining wetland definition, types, classifications and assessments. An understanding is needed of when different methods are applied by whom, and for what purpose.

Recommendation #52
Publicize and make available information about when different wetland definitions, classifications, and assessments should be used.

Recommendation #53
Assess current programs, policies, regulations and rules which may affect wetlands to determine if overt or inadvertent wetland losses or degradation is occurring and identify opportunities for increased wetland conservation.

Objective 5C. Develop a Montana wetland mitigation and mitigation banking policy.

Background
A mitigation policy would provide guidance for those involved in the development of consistent and effective recommendations to protect and conserve wetlands. Application of the policy would be intended to enable federal, state and private developers to anticipate recommendations and incorporate mitigation measures into the early stages of the planning process, thus helping to preclude unnecessary project delay, litigation, and other problems. Federal policy guidance provides for the establishment, use and operation of mitigation banks for the purpose of providing compensatory mitigation for authorized adverse impacts to wetlands and other aquatic resources and to facilitate wetland mitigation in advance of project impacts in order to offset future wetland losses. Local procedures are needed to implement banking and provide guidance to Montanans.

Recommendation #54
Establish and define the required sequence of alternatives that must be considered for mitigation of wetlands impacts.

Recommendation #55
Establish guidelines and methods of selecting ecologically desirable and practicable alternatives which are consistent with sequencing and other laws and regulations.
Recommendation #56

Define methods, to be used prior to formulation of mitigation recommendations, for analyzing and evaluating impacts and elements of a mitigation proposal.

Recommendation #57
Define and establish criteria for in-kind and out-of-kind mitigation and success criteria and monitoring requirements for mitigation.

Recommendation #58
Develop local mitigation banking procedures, in cooperation with agencies and the public, to help achieve consistency and flexibility in evaluation of mitigation banking recommendations throughout the state of Montana.

Recommendation #59
Establish local conditions for banks.
For example, allow for the use of mitigation banks only when the bank is in the same hydrologic unit as the affected site.

Recommendation #60
Establish criteria to measure and monitor mitigation banking effectiveness statewide.

Recommendation #61
Develop guidelines for public review and comment in the development of the provisions of banking agreements.

Objective 5D. Develop Montana wetland water quality standards.

Background
Water quality standards for wetlands are needed to ensure full protection of wetlands under the Federal Clean Water Act, determine designated uses, determine water quality criteria to protect those uses, and develop a wetland nondegradation policy. The Montana Water Quality Act requires adoption of water quality standards to protect the quality of state waters and their present and future beneficial uses. Wetlands are considered state waters under the Act. Currently, Montana has no specific water quality standards for wetlands.

Recommendation #62
Develop numerical, biological and narrative criteria for wetland waters in Montana.

Recommendation #63
Establish beneficial uses for Montana wetlands.

Recommendation #64

Adopt standards based on criteria and adopt beneficial use classifications.
DEQ, with broad-based public involvement, should develop and adopt specific water quality standards for wetlands. The standards should identify various wetland types in the state, beneficial uses of the state's wetlands, and specific chemical, physical and biological criteria needed to support these beneficial uses.

V. ASSESSING STRATEGY SUCCESS

The Montana Wetland Conservation Strategy has identified numerous recommendations to better manage and conserve Montana's wetlands. Without adequate monitoring and feedback, not only will progress in achieving goal's be unknown, but there will be recognition of programs that are particularly effective and those that are not. An evaluation feedback loop is vital to ensuring that limited staff and financial resources are being used wisely and effectively.

This section describes the two parts of the Conservation Strategy for Montana's Wetland's implementation. The first concerns biennial action plans, how they will be developed, monitored and evaluated against the recommendations outlined in this document. The second involves the actual monitoring of Montana's wetlands to ultimately measure the success of the Strategy.

The Montana Wetlands Council will coordinate and facilitate the implementation of the Strategy, and act as a forum for the state's policies on wetland restoration and other priority issues. Further, the Council will pursue stable, long-term funding sources and legislation required for successful implementation of the Strategy recommendations.

Biennial Action Plans

The Montana Wetlands Council will develop a detailed action plan based upon the action items identified in the Strategy. The action plans should outline the specific activities that will be accomplished to meet the objectives set forth in the Strategy. Action plans should cover a 2-year period. Appropriate subcommittees of the Montana Wetlands Council will develop details for specific sections of the plan. If implementation is to be successful, the subcommittees must identify who does what, when and how. Information in the action plans will include:

- The action that will be undertaken;
- The agency or organization bearing primary implementation responsibility;
- Cooperating agencies and organizations;
- A time line for when the action will be completed;
- Funding needs and resources; and
- An evaluation process.

Each agency or organization will be responsible for tracking its assigned responsibilities, documenting its program activities, and providing data and progress reports to the Montana Wetlands Council.

The Council will compile the reports and information, preparing and delivering a statewide progress report for the Governor, Montana Legislature, Watershed Coordination Council and the public every two years. Action plans and statewide progress reports should be prepared every two years thereafter.

Analyses of the Conservation of Montana's Wetlands

If the Montana Wetlands Conservation Strategy is successful, Montana's wetlands will be preserved and enhanced. To determine whether Montana's remaining wetlands are being lost or adversely affected by human activities, a method must be developed to determine wetland gains and losses, the types of wetlands being affected, the activities contributing to these wetland changes, and changes resulting from natural processes at work across the state. Agencies should coordinate measurement of progress on wetland conservation goals, evaluate wetland planning, programs, and regulatory actions, and establish a consistent reporting mechanism to be used by all. A subcommittee of the Montana Wetlands Council will be established to develop a system that enables Montanans to measure and evaluate the on-the-ground conservation, enhancement and protection of Montana's wetlands.

VI. HOW YOU CAN BE INVOLVED IN WETLAND CONSERVATION

In Montana the responsibility for wetlands conservation and management is shared among state and federal agencies, tribal governments, county and city planners, non-profit organizations, corporations and ultimately thousands of private landowners who make the day-to-day decisions about the management and use of wetlands. Agencies, organizations or individuals cannot by themselves implement a coordinated and effective strategy to protect and conserve wetlands across the 147,000 square miles of the "Big Sky" state. However, this can be done through cooperation, participation, and commitment of the full spectrum of Montanans whose daily activities and decisions affect wetlands and all Montanans who benefit from the many values of wetlands.

Interested persons can get involved in wetlands conservation in Montana in numerous ways:

- Review the Montana Wetland Conservation Strategy. Those with questions can contact the Montana Department of Environmental Quality or any of the people, agencies, or organizations listed in the appendices of this document.

- Educate yourself, friends and families about the functions and benefits wetlands provide to society. Providing accurate information to people who own or affect wetlands can have far-reaching conservation benefits.

- Participate in local efforts to conserve wetlands where you live. Each individual person can make a difference in protecting wetlands by understanding their function and protecting them as one of Montana's important natural resources.

- Encourage agencies, private conservation organizations and businesses to support and help implement the Montana Wetland Conservation Strategy.

Appendix A - Abbreviations

CFR	Code of Federal Regulations
COE	U.S. Army Corps of Engineers
CWA	Clean Water Act
DEQ	Montana Department of Environmental Quality
DNRC	Montanan Department of Natural Resources and Conservation
EPA	U.S. Environmental Protection Agency
EQC	Montana Environmental Quality Council
HGM	Hydrogeomorphic
MOU	Memorandum of Understanding
NNL	No Net Loss
NRCS	USDA Natural Resources Conservation Service
USFWS	U.S. Fish and Wildlife Service
404	COE 404 Dredge and Fill Permit Program

others

Appendix B - Definitions

floodway
beneficial use
hydrogeomorphic
function
value
delineate
jurisdictional
factors
mitigation
sequencing
others...

Appendix C - Wetland Issues and Concerns Identified by Montanans

Issues and Concerns Relative to Wetland Conservation in Montana

Identifying and documenting issues and concerns Montanans have about wetlands is the key to development of a useful wetland conservation strategy. The Wetland Council surveyed a broad cross section of Montanans in 1995 and received a tremendous response of thoughtful and insightful viewpoints. Issues and concerns identified are presented below:

General Issues or Concerns

- Strategy document must be clear, concise and easily understood.
- Why is the Wetland Council developing a Strategy? Is there a need? Is wetland loss a serious problem statewide? Will the strategy add a new layer of bureaucracy?
- Society places emphasis on safe transportation systems. Strategy must be fair and include a balance of environmental conservation and development of a safe transportation system.
- Strategy needs to keep things (processes) flowing and not become a bottleneck.
- Wetlands are rapidly being degraded and lost.
- Biodiversity must be sustained in the landscape.
- Rare wetland systems must be conserved especially those that directly support threatened or endangered species or sensitive species.
- Need to recognize importance of different wetland types in arid environments such as in eastern Montana (potholes and riparian systems).
- Governmental agencies, private landowners and conservation organizations must coordinate their efforts to attain an overall goal of no net loss of wetlands
- Need for incentive programs for private landowners (tax relief, Waterbank, Wetland Reserve Program, Conservation Easements etc.)
- Need for aggressive wetland restoration and enhancement programs ie.(Partners for Wildlife, Montana Waterfowl Habitat Enhancement Program, Adopt a Pothole program, Ducks Unlimited etc.)
- The strategy should complement not conflict with existing regulations.
- We need a national wetlands policy that preserves unique high value wetlands, sets guidelines allowing development for our ports, and cities, and allows mitigation for lower value wetlands.

* Incentives should be provided for wetland enhancement and creation.
* Standards and mitigation requirements should be developed to reflect the value of the wetland.

- The U.S. Fish and Wildlife Service should not have any role in wetlands on private agricultural land. Their involvement should only be at the request of the landowner/operator.
- Wetland acquisition programs should target high value wetland complexes.

Interagency Cooperation and Coordination

- In Coal Mining Reclamation, current DEQ rules read that land must be reclaimed to a state as it was before mining activity. The coal mining industry has a tremendous opportunity to create wetlands in arid ecosystems of eastern Montana. But current rules make it hart to do.
- Mutual understanding among all state and federal agencies promoting net gain of wetlands. Restoration, enhancement and creation of wetlands should be a positive thing. These agencies

need to make policies and rules so that consistency among agencies is possible in promoting this goal.

Regulatory

- State involvement in wetlands needs to be kept at a minimum as there are already several federal laws and regulations protecting wetlands.
- Streamline permitting process to reduce number of agencies involved.
- Protection of artificially created wetlands and the associated mitigation will get in the way of reasonable logical development.
- Need for Regional Standard applied to mitigation ratios within the COE Omaha regulatory district. (Every state within the Omaha District should use the same mitigation ratios)
- The Wetland Council should coordinate efforts to promote fair, reasonable and consistent regulations among agencies applied across the board to MDT and any other entity.
- It takes too long to get permits.
- COE seems unable to make timely decisions and interface with other agencies.
- The State of Montana does not certify certain Nation-Wide Permits by the State of Montana
- The agricultural community does not want producers to be required to perform more extensive mitigation than required by 404 permits.
- The wetland Memorandum of Agreement (MOA) should not be used as a justification for requiring cooperation between USDA and other federal agencies under Swampbuster regulations. The 1996 Farm Bill does not tie Swampbuster to the MOA. Therefore, the Swampbuster regulations should not include any reference to provisions for the MOA and regulation should only apply to Swampbuster provisions covered by law.
- Under the mitigation portion of the farm bill regulation, NRCS State Conservationists are given authority to exclude entire classes or types of wetlands from wetlands that have little functional value, and wetlands that have negligible impact on a watershed basis.
- Strong regulations and consistent enforcement are needed.
- The Streamside Management Zone law should be maintained as is. Some groups feel that adjacent wetlands associated with streams, lakes or other water bodies are adequately protected as long as current recommended BMP's are followed as outlined in the SMZ law.
- Laws and regulations pertaining to 404 and 401 State certification are applied inconsistently.
- Wetlands that are created, enhanced or restored to mitigate a wetland conversion should be protected and maintained for the duration, or useful life, of the conversion. The agency (COE, NRCS) should be required to keep records documenting the mitigation requirements to assist landowners in protecting the economic value of lands voluntarily created, enhanced or restored.
- Are there any regulations governing enhancement or restoration of existing wetlands?

Mitigation

- There is no leadership in development of a Wetland Banking System.
- Are there any mitigation requirements and if so what are they?
- What is adequate mitigation and what is necessary.
- High elevation sites and wetlands in high precipation zones pose a difficult dilemma in assessing functions and values and what appropriate mitigation is necessary if impacts should occur to

them.
- A compliance program should be established to hold permittees accountable for adequate mitigation. This program should determine if mitigation was accomplished and whether it adequately replaces lost functions.
- A mitigation bank pilot project is needed.
- On public land, public agencies may not have the personnel, and mechanisms in place to assure mitigation projects are adequately protected in perpetuity.
- A wetland banking system is needed.

Definition
- Is there a wetland definition that is agreed upon by all regulatory agencies?
- Should mitigation and or wetland assessments deal with wetland values? The term has fallen out of fashion in recent years and we are told to discuss only functions. If an action were to impact either wetland x or wetland y, depending upon the alternative selected, and wetland x had a lower functional rating than wetland y wouldn't the public value wetland y over wetland x and thus the alternative to choose would be that which impacts x and not y?
- The definition of a wetland should be revised to require a 15-day inundation and 21-day saturation period during the growing season in order for the area to meet the hydrology requirements for wetlands. All three wetland criteria--hydrology, predominance of hydrophytic plants, and hydric soil, should be required w must be present under normal rainfall conditions.
- Concern regarding the concept of functional wetlands versus jurisdictional wetlands as it may soon be applied to the regulatory process via Hydrogeomorphic (HGM) assessment. Concern that HGM assessment area may include areas that regulatory agencies deem non-jurisdictional. Consequently applicant for 404 permit may be required to mitigate for impacts other than jurisdictional impacts.

Education
- Need for clear process as to who, what, where, and when relative to permitting for john q. public.
- What activities are allowed in wetlands. i.e agriculture, logging, subsurface mining (oil/gas) exploration etc?
- What regulations if any apply to development near wetlands when building home sites, barns, corrals, etc. what permits are necessary and who would a landowner contact?
- There is a misconception that wetlands contribute to saline seeps.
- There should be effective information and education programs on wetland functions and values.

Data
- There is a lack of data to assess existing wetland conditions.
- Lack of data and analysis in order to determine cumulative impacts (loss/gain).
- What was original wetland acreage at turn of century compared to the present condition?
- No net loss may not be practical at this time due to current permitting procedures and lack of a tracking system to document impacts and required mitigation as with nationwide permits.

Landowner Property Rights

- Implementation of the interagency MOA on wetlands administration should be delayed until landowners are fully addressed. State or federal government should not use eminent domain to gain ownership of privately owned farmland for wetland uses.

Tribes

- Wetland protection on the Flathead Indian Reservation is threatened by accelerated subdivision development, proposed highway expansion, proximity to rapidly growing urban centers such as Kalispell and Missoula, impacts to wetlands from agricultural activities, irrigation, grazing impacts on uplands surrounding wetland and within wetland itself, and impacts from hydro-electric facilities such as Kerr Dam. Water level manipulation at these dams has completely altered the natural hydrologic flux and as a consequence wetlands along Flathead Lake and the lower Flathead River have been lost.
- The Blackfeet Indian's identified a strong need for education, integration of federal and tribal programs, and improved communications and understanding between the tribe and state agencies of Montana. Wetlands on the Blackfeet Reservation are threatened by agricultural activities, irrigation, and grazing.

Appendix D . Index of Current Agencies, Organizations, Programs and Contacts Involved in Wetlands.

Many agencies, organizations and programs are involved in managing wetlands, providing wetland technical assistance and information, and regulating activities in wetlands. The following table outlines those involved in wetlands in Montana and provides a key contact person. Appendix E provides a summary of these programs.

AGENCIES, ORGANIZATIONS, PROGRAMS AND CONTACTS INVOLVED IN WETLANDS IN MONTANA

A. Federal Agencies and Programs

United States Department of Agriculture (USDA)

Natural Resources Conservation Service (NRCS)

1. Wetland Reserve Program (WRP). . . . . .Local NRCS Office
2. Wildlife Habitat Incentives Program (WHIP)
3. Swampbuster/Wetland Conservation Provisions
4. Resource Conservation and Development Council Program (RC&D)
5. Environmental Quality Incentives Program (EQIP)
6. Farmland Protection Program
7. Watershed Program (PL-566)
8. Watershed Easement Program (PL-566)
9. Forest Stewardship Program (FSP) and Stewardship Incentive Program (SIP)

Farm Services Agency (FSA)

10. Intermountain Riparian/Wetland Resource Technical Team. . ..Sandra Wyman 587-6924
11. Conservation Reserve Program (CRP)

Forest Service (USFS)

United States Department of the Interior

Fish and Wildlife Service (FWS)

12. Partners for Wildlife
13. North American Wetland Conservation Act (NAWCA) and North American Waterfowl Management Plan (NAWMP)
14. National Wetland Inventory (NWI)
15. Fish and Wildlife Coordination Act (FWCA)
16. National Wetlands Priority Conservation Plan (NWPCP)
17. Management of National Wildlife Refuges
18. Emergency Wetlands Resources Act
19. Endangered Species Act

Bureau of Reclamation (BOR)

20. Wetland Development Program . . . . . .Tom Parks 247-7295

Bureau of Land Management (BLM)

21. Challenge Cost Share . . . . . .Bob Haburchak 255-2798

22. Federal Land Policy and Management Act

Geological Survey (USGS)

23. Cooperative Research Program
24. National Water Quality Assessment (NAWQA)

United States Environmental Protection Agency (EPA)

25. Wetlands Protection Development Grant Program . . . . . .Steve Potts 441-1140
26. Nonpoint Source Grant Program (NPS)
27. Section 404 of the Clean Water Act: Advanced Identification of Wetlands
28. Clean Water Act, Section 404 Permit Review (404)

Army Corps of Engineers (COE)

29. Clean Water Act (Section 404) Permit Program (404)
30. Section 10 of the Federal Rivers and Harbors Act
31. Wetland Mitigation Banking. . . . . .Jean Ramer 441-1375

Other federal programs

32. Surface Mine Reclamation Control Act
33. National Environmental Protection Act (NEPA)
34. Section 404 Clean Water Act: Water Pollution Control Act
35. Land And Water Conservation Fund
36. Water Resources Development Act (Section 1135)
37. National Environmental Policy Act
38. Reserve Water Rights (federal and tribal)
39. Pitman-Robertson and Dingell-Johnson Acts
40. State Comprehensive Outdoor Recreation Plans
41. Special Area Management Plans
42. Swampbuster
43. National Flood Insurance Program

B. State Agencies and Programs

Montana Department of Fish, Wildlife and Parks

44. Montana Migratory Game Bird Stamp Program . . . . . .Jeff Herbert 444-2612
45. Upland Gamebird Habitat Enhancement Program
46 Watchable Wildlife Program
47. Montana Stream Protection Act (124 permit for government entities)
48. Pitman-Robertson and Dingell-Johnson Acts
49. State Comprehensive Outdoor Recreation Plans
50. Land and Water Conservation Fund. . . . . .Mary Ellen McDonald 444-3756

Montana Department of Environmental Quality

51. Montana Wetlands Council. . . . . .Lynda Saul 444-6652
52. Section 401 of the Clean Water Act: Water Quality Certification. . .Jeff Ryan 444-4626
53. Nonpoint Source Pollution Prevention Program. . . . . .Stuart Lehman 444-5319
54. Storm Water Discharge Permits. . . . . .Roxann Lincoln 444-5338

55. Montana Pollution Discharge Elimination System. . . . . .Roxann Lincoln 444-5338
56. Short-term Exemption from Montana's Surface Water Quality Standards. .Jeff Ryan 444-4626
57. Wetland Water Quality Standards. . . . . .Randy Apfelbeck 444-2709
58. Comprehensive, Environmental, Response, Compensation and Liability Act (CERCLA). . . . . .Neil Marsh 444-0487
59. Comprehensive Environmental Cleanup Act. . . . . .Carol Fox 444-0478
60. Montana Strip and Underground Mine Reclamation Act. . . .Steve Welch 444-4964
61. Major Facility Siting Act. . . . . .Art Compton 444-6791
62. Metal Mine Reclamation Act. . . . . .Art Compton 444-6791

Montana Department of Natural Resources and Conservation

63. Montana Flood Plain and Floodway Management Act . . . . .Karl Christians 444-6654
64. Montana Water Use Act, Water Right Permit
65. Montana Land-Use License or Easement on Navigable Waters
66. Montana Streamside Management Zone Law

Montana Department of Transportation

67 Wetland Mitigation. . . . . .Larry Urban 444-6224

Montana Department of Agriculture

68. Montana Pesticide Act
69. Montana Agricultural Chemical Ground Water Protection Act

Montana State Library System

70. Natural Resource Water Information System. . . . . .Jim Stimson 444-5356
71. Montana Wetland Information Clearinghouse and Metadata. . . . . .Val Jaffe 444-3345
72. Natural Heritage Program. . . . . .David Genter 444-3019

Montana State University

73. Extension Service - Forest Stewardship Program (FSP)

University of Montana

74. Riparian and Wetland Research Program. . . . .Paul Hansen 243-2050
75. Montana Riparian and Wetlands Association (MRWA). . .Paul Hansen 243-2050
76. Hydrogeomorphic Assessment Development. . . .Paul Hansen 243-2050
77. Yellow Bay Biological Station. . . . . .Rick Hauer 982-3301

Environmental Quality Council

78. Montana Environmental Policy Act

C. Tribal Programs

79. Blackfeet Aquatic Lands Protection Ordinance
80. Blackfeet Wetlands Stewardship Program. . . . . .Mary Clair Weatherwax 338-7421
81. Wetland Conservation Strategy for the Flathead Indian Reservation

82. Chippewa Cree Wetlands Conservation Plan
83. Crow Wetlands Program
84. Northern Cheyenne Wetlands Protection Program

D. Local Government Programs

85. City and County Governments
86. Local Water Quality Protection Districts. . . . . .Carole Mackin (State Coordinator) 444-5492
87. County Soil and Water Conservation Districts. . . . . .Steve Schmitz (State Coordinator) 444-6691
88. Water and Sewer Districts
89. Montana Salinity Control Association. 278-3071
90. Locally led conservation efforts

E. Other Organizations and Programs

91. Montana Watercourse. . . . . .Mary Ellen Wolfe 994-1910
92. Montana Wetlands Trust. . . . . .Charles Van Hook 442-3199
93. Montana Riparian and Wetlands Association
94. Montana Watershed Coordination Council. . . . . .Warren Kellogg
95. Montana Water Resources Center. . . . . .Dorothy Bradley
96. Ducks Unlimited
97. National Wildlife Federation
98. Audubon Society. . . . . .Janet Ellis
99. Trout Unlimited
100. Nature Conservancy
101. Montana Land Reliance. . . . . .Bill Long 442-1316
102. Five Valleys Land Trust. . . . . .Tracy Stone-Manning 549-0755
103. Flathead Land Trust. . . . . .JoAnn Speelman 755-7000
104. Gallatin Valley Land Trust. . . . . .Jim Elias 587-8404
105. Rocky Mountain Elk Foundation. . . . . .Thomas Woodruff 523-4500
106. Flathead Basin Commission

Appendix E. Summary of Current Wetland Agencies, Organizations and Programs.

A. Federal Agencies and Programs Involved in Wetlands

United States Department of Agriculture (USDA)

Natural Resources Conservation Service (NRCS)

1. Wetland Reserve Program (WRP)

The 1990 reauthorization of the Farm Bill established a Wetlands Reserve Program that provides financial incentives for restoration and protection of wetlands if the producer agrees to a long-term easement. The WRP provides cost share for landowners to restore degraded wetlands. In addition, landowners may sell an easement to USDA in return for the agricultural value of the land.

There are three options for enrolling in the WRP:
1. The landowner sells a perpetual easement to USDA in return for 100% cost share for wetland restoration and the full agricultural value of the land;
2. The landowner sells a 30-year easement to USDA in return for 75% cost share for wetland restoration and 75 percent of the agricultural value of the land;
3. Under the Restoration Cost Share option, the landowner receives 75% cost share for wetland restoration and no easement is sold to USDA.

NRCS, in consultation with the landowner, decides which land uses will be compatible with the purpose of the easement. Limited haying, grazing and other uses may be allowed. The landowner retains the recreational rights on the land, including the option of fee hunting.

Important points about the Wetland Reserve Program:
* Landowners apply a their local NRCS Field Office.
* Applications are evaluated by the State Technical Committee and approved by the NRCS State Conservationist.

2. Wildlife Habitat Incentives Program (WHIP)

WHIP provides cost-share for private landowners to develop, restore and enhance wildlife habitat. The objectives of the program are to provide technical and financial assistance, educate the public about wildlife conservation and develop a positive public attitude about wildlife habitat work. The emphasis of WHIP is to conserve and develop habitats of state or national significance and habitats of wildlife populations that are reduced or declining due to agricultural activities, to implement practices beneficial to fish and wildlife, and to restore native habitats with native plants. States will identify priority wildlife habitats, species, geographic areas and habitat development practices after obtaining comment from local work groups and the State Technical Committee.

Landowners apply at their local NRCS Field Office. A Wildlife Habitat Development Plan will be

developed for each WHIP application. The State Technical Committee will evaluate and prioritize applications for funding.

Important points about the Wildlife Habitat Incentives Program
- Landowners agree to maintain all cost-shared practices for a minimum of 10 years
- WHIP contract holders are not required to allow public access to their land
- Partnership projects - those involving technical assistance from other agencies and/or private interests - will be given priority for funding

3. Swampbuster/Wetland Conservation Provisions

4. Resource Conservation and Development Council Program (RC&D)

5. Environmental Quality Incentives Program (EQIP)

Wildlife and wetland habitat projects may be funded under EQIP on conservation treatment units where wildlife is a secondary land use. The program provides funding to projects that address priority resource concerns identified by local work groups at the county level.

EQIP combines funding under the former Great Plains Conservation Program, the Agricultural Conservation Program, the Water Quality Incentives Program and the Colorado River Salinity Control Program into a single, voluntary conservation program for private landowners operating within identified priority areas.

Important points about the Environmental Quality Incentives Program:
- Producers may apply for the program at any time
- EQIP requires a long-term (5-10 years) contract
- Contract holders are not required to allow public access
- Applications are evaluated and approved for funding by the State Technical Committee

6 Farmland Protection Program

7. Watershed Program (PL-566)

8. Watershed Easement Program (PL-566)

9. Forest Stewardship Program (FSP) and Stewardship Incentive Program (SIP)

The Forest Stewardship and Stewardship Incentive programs are companion programs created by the 1990 Farm Bill to provide technical and financial assistance to landowners who want to protect and enhance their forest lands and associated wetlands and wildlife habitat. The FSP offers technical assistance to landowners for developing a Forest Stewardship Plan which addresses all natural resource concerns on the property. In Montana, the FSP provides landowners with a training workshop which gives them the background to develop their own management plan if they wish. SIP provides cost share assistance to landowners who choose to have the management plan developed by other resource specialists and for implementing practices specified in the plan.

Important points about FSP and SIP:

- Landowners develop a Forest Stewardship Plan on up to 5,000 acres of forest land.
- Assistance with plan development is available from NRCS, DNRC Forestry or may be contracted with a registered forestry consultant.
- SIP provides 75 percent cost - share for plan development and for implementation of planned practices.
- To be eligible, landowners must not derive most of their income from timber management on the property and must own no more than 1000 acres of forest land (up to 5000 acres with an approved waiver).
- Providing public access is not required for eligibility.

United States Department of Agriculture (USDA)

Farm Services Agency

10. Intermountain Riparian/Wetland Resource Technical Team

11. Conservation Reserve Program

United States Department of Agriculture (USDA)

Forest Service

United States Department of the Interior (USDI)

Fish and Wildlife Service (USFWS)

12. Partners for Wildlife Program

Partners for Wildlife (PFW) is the U.S. Fish and Wildlife Service private lands program. The program provides funding and technical assistance to private landowners interested in fish and wildlife habitat projects on their land. The program is strictly voluntary. Initially, PFW focused exclusively on wetland habitat work, but since 1992 instream and riparian restoration, grazing management, native prairie restoration, fish and wildlife - friendly irrigation systems, and a myriad of other projects are also eligible.

Important points about Partners for Wildlife

- $500,000 to $750,000 available in Montana annually
- PFW has worked with over 550 landowners in Montana
- Matching funds and funding partnerships are critical
- Landowner must sign a Wildlife Extension Agreement (WEA)
- WEA does not require landowner's to provide hunter access
- Program is flexible - landowner's economic goals are considered
- Interested landowners should contact local FWS biologist

13. North American Waterfowl Management Plan (NAWMP) and North American Wetland Conservation Act (NAWCA)

NAWMP, a partnership enacted in 1986, is an international effort to reverse waterfowl population declines in North America. Under this plan, U.S., Canadian, and Mexican partners agreed to

pool their resources to conserve millions of acres of waterfowl habitat in specific joint venture areas deemed critical to waterfowl. The joint ventures have primarily tried to pursue non-regulatory strategies which can be implemented through voluntary and cooperative actions. All agencies, groups, or individuals having interests in wetlands, waterfowl, other wetland wildlife, soil and water conservation, and sustainable resource use are encouraged to join these partnerships. Two such ventures currently are in effect in Montana; the Prairie Pothole Joint Venture (PPJV) and the Intermountain West Joint Venture (IWJV). The PPJV in Montana has three focus (project) areas. These are Northeast Montana (Sheridan, Daniels, and Roosevelt counties), Beaver Creek (Phillips, Valley, and Blaine counties), and Five Valleys (Flathead, Lake, Powell, Granite, and Missoula counties).

The IWJV is a newer venture, established in 1994. The Montana portion of this venture includes three focus areas which cover parts of 12 counties in southwestern Montana and Lincoln County in the northwestern corner of the State.

NAWCA is a principal fund source for the NAWMP. The Act created the North American Wetlands Conservation Fund designed to help support projects on public and private lands. A nine member council is established to review annual project proposals submitted by partners for funding under the Act. Projects that fall within established Joint Ventures receive highest priority.

14. National Wetland Inventory

The NWI program is responsible for identifying, classifying, mapping, and reporting on the status of the wetlands of the United States. The primary objectives of the NWI program are to develop and distribute scientific information on the extent and characteristics of U.S. wetlands and produce wetland maps that accurately represent these resources.

15. Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act provides a key role for states in evaluating the impacts on fish and wildlife from water resource development projects (such as dam construction or reclamation projects) and Clean Water Act Sections 402 and 404 permits. The goals of the evaluation are to assess the status of affected fish and wildlife resources and to prevent or mitigate their loss and damage. The Act can be used to protect wetlands that are important to fish and wildlife conservation. However, the mitigation reports are only advisory to the lead federal agency, which is not required to follow their recommendations.

16. National Wetlands Priority Conservation Plan (NWPCP)

17. Management of National Wildlife Refuges

18. Emergency Wetlands Resources Act

19. Endangered Species Act

The purposes of the Endangered Species Act are (1) to provide a means whereby the ecosystems upon which endangered and threatened species depend may be conserved, (2) to provide a program for conservation of such endangered and threatened species, and (3) to take such steps as may be appropriate to achieve the purposes of other treaties and conventions that the United State has pledged itself to in the international community to conserve to the extent practicable the various species of fish, wildlife and plants facing extinction. In Montana, almost all of the endangered and threatened species depend on or use wetland and or riparian habitats. Protecting remaining wetland habitats will not only help in the recovery of Montana's listed species but will help assure that additional species need not be listed pursuant to this Act.

United States Department of the Interior (USDI)

Bureau of Reclamation

20. Wetland Development Program (Great Plains Region)

This program provides assistance in the form of grants or cooperative agreements to public or private organizations for improvement of wildlife habitat associated with water systems or supplies affected by BOR projects. The limited private lands authority under this program provides challenge cost share opportunities. Funds are not available for projects involving individual landowners. However, grants may be available to conservation districts and private conservation groups to address wildlife habitat needs within a given area. Funds also are available to supplement existing programs in a basin where BOR water supplies are being affected.

United States Department of Interior (USDA)

Bureau of Land Management

21. Challenge Cost-Share Program

BLM uses various range improvement, cost-share, and specially appropriated funds for riparian/wetland work on public land in Montana.

Section 124 of the Omnibus Consolidated Appropriations Act of 1997, PL 104-208, provides a framework by which the BLM may provide funds through watershed restoration and enhancement agreements covering public or private land or both to restore and maintain fish, wildlife, and other biotic resources on public lands within specific watersheds.

The Challenge Cost-Share program has annually provided over $400,000 to match with non-federal goods, in-kind services, and funds to accomplish work within fish, wildlife, and threatened and endangered programs. Priority areas for funding include riparian/wetland on-the-ground projects. The list of non-federal partners which help leverage these funds is long, including MDFWP, Ducks Unlimited, universities, Trout Unlimited, and many others. Other federal agencies also provide funds where benefits to their organizations can be demonstrated.

Various grants periodically received through entities such as NAWCA and the National Fish and Wildlife Foundation (NFWF) provide funds for riparian/wetland on-the-ground work on public lands with partners. For example, about half of the Milk River Basin Project funds which were awarded through NAWCA will be applied to needed waterfowl habitat work on public lands.

22. Federal Land Policy and Management Act

In 1976 Congress passed FLPMA. The Act removed the ambiguity of BLM's responsibilities in the management of public lands and firmly established the concepts of multiple use and sustained yield.

United States Department of the Interior (USDA)

National Biological Survey

United States Department of the Interior (USDA)

Geological Survey

23. Cooperative Research Program

24. National Water Quality Assessment (NAWQA)

United States Environmental Protection Agency (EPA)

25. Wetland Protection Development Grants Program

Beginning in 1990 the EPA made grants available to states and tribes for development and or enhancement of their wetlands protection programs. Grant funds can be used for both regulatory and non-regulatory wetland protection activities. EPA Wetlands Program State Development Grants Funds can be used to:

- incorporate wetlands into state water quality standards,
- improve Section 401 water quality certification programs to protect wetlands,
- develop state wetland regulatory programs,
- assist state Section 404 assumption efforts,
- develop statewide wetlands strategies, and
- training leading to development of state wetlands protection programs.

The grants are limited to program development and can not be used to fund operational support. Grant funds are awarded on a competitive basis within an EPA region. Recipients must cost share a minimum of 25 percent of each award's total project costs. Grants are available to state wetland agencies, state water quality agencies, state agencies with wetland-related programs and Indian tribes.

26. Nonpoint Source Grant Program

27. Section 404 of the Clean Water Act: Advanced Identification (Joint program with COE)

Section 404(b)(1) guidelines provide a planning process whereby EPA and the COE in advance of any specific permit applications jointly identify wetlands that are generally suitable or unsuitable for discharge permits.

28. Clean Water Act Section 404 Permit Review

U.S. Army Corps of Engineers (COE)

29. Clean Water Act Section 404 Permit Program: Dredge and Fill Permit

This program requires that a 404 permit be obtained from the U.S. Army Corps of Engineers for placement of dredged or fill material in "waters of the United States." The definition of waters of the U.S. is very broad and includes wetlands.

The 404 permit program regulates only the discharge of dredged or fill material. Other types of physical alteration, such as drainage or excavation, may also adversely affect wetlands but are not regulated under this program unless they also involve the discharge of dredged or fill materials into waters of the U.S. In addition, under Section 404(f) certain types of discharges are exempt from the permit process. Some of these exemptions are as follows:

- normal (ongoing) farming, silviculture, and ranching practices;
- maintenance of recently damaged parts of structures such as dikes, dams and levees;
- construction or maintenance of farm or stock ponds or irrigation ditches;
- maintenance of drainage ditches;
- construction of temporary sedimentation basins;
- construction or maintenance of farm or forestry roads or temporary roads for moving mining equipment if best management practices are followed.

Permits to authorize placement of dredged or fill material in waters of the U.S., including wetlands, can occur through either individual 404 permits or nationwide, regional, or state general 404 permits. Larger dredge and fill projects are generally authorized through the individual permit process, whereas smaller projects (those that are expected to have minimal individual or cumulative impacts) are authorized under nationwide, regional, or state general permits, which undergo less and sometimes no individual review.

The Guidelines provide the substantive environmental criteria by which permit applications are reviewed by the COE and EPA. These Guidelines include;

- guidance to evaluate impacts on wetlands (as special aquatic sites);
- requirements to avoid and minimize impacts to wetlands, and to compensate for unavoidable impacts to wetlands; and
- evaluation of less damaging practicable alternatives to wetlands filling.

There are also several national Memoranda of Agreement between the COE and EPA regarding 404 program policies such as mitigation, geographic jurisdiction, and enforcement.
The COE in conjunction with the EPA, USFWS, and NRCS have agreed to use a single, consistent Federal approach for identifying and delineating boundaries for jurisdictional wetlands which fall under the jurisdiction of Section 404 of the Clean Water Act. This approach is described in detail in a 100 page manual (U.S. Army Corps of Engineers Manual for Identifying and Delineating Jurisdictional Wetlands, 1987). This approach is based on evaluation of the three criteria; hydrology, soils and vegetation.

Section 404 of the Clean Water Act: General Permits:
Under Section 404(e), COE is authorized to issue general permits on a state, regional, or

nationwide basis for categories of activities that are similar in nature and that will cause only minimal individual and cumulative environmental effects. General permits streamline the regulatory process, however, public notice for specific projects is not required and neither the public nor federal or state agencies are given the opportunity to comment on specific projects. Therefore the general permit program may not protect against cumulative impacts of many small-scale projects.

30. Section 10 of the Federal Rivers and Harbors Act

Section 10 of the Federal Rivers and Harbors Act of 1899 (33 U.S.C. 403) requires authorization by the Corps of Engineers for alteration of any navigable water of the United States. The term "navigable water" under the Rivers and Harbors Act of 1899 is much narrower than the term "waters of the United States" in the Clean Water Act. Only three waterways in Montana are considered navigable waters under the Rivers and Harbors Act of 1899: the Missouri River from Three Forks, Montana, downstream to the North Dakota border; the Yellowstone River from Emigrant, Montana, downstream to the North Dakota border; and the Kootenai River from the Canadian border downstream to Jennings, Montana.

31. Wetland Mitigation Banking

<u>Other federal programs</u>

32. Surface Mine Reclamation Control Act

33. National Environmental Protection Act (NEPA)

34. Section 404 of the Clean Water Act: Water Pollution Control

35. Land and Water Conservation Fund

The Land and Water Conservation Fund Act was amended in 1986 by the Emergency Wetlands Resources Act. EWRA recognized the contribution of wetlands in providing fish and wildlife habitat and offering significant recreational and commercial benefits. The amended LWCF Act requires states to consider wetlands in SCOPRs. Specifically, states are expected to identify the agencies and organizations involved in wetlands management, evaluate existing and proposed wetlands protection mechanisms, assess wetlands, identify wetland loss and degradation factors and establish priorities for protection.

36. Water Resources Development Act (Section 1135)

37. National Environmental Policy Act

The National Environmental Policy Act (NEPA) declared a national policy for the environment; established the White House Council on Environmental Quality; and set out a process for ensuring that environmental impacts be analyzed and considered in federal decision making. Impacts to wetlands from federal actions (e.g. federally assisted or approved projects) must be analyzed and documented. This includes analysis and documentation to avoid, minimize, rectify, reduce, and/or compensate for impacts to wetlands. Federal actions having a significant impact on the environment must be analyzed and documented in a detailed environmental impact statement

(EIS).

38. Federal Reserved Water Rights

Federal Reserved Water Rights are water rights recognized by the state for the purpose of maintaining the uses for which the federal land was reserved. BLM has acquired a variety of water rights to support wildlife wetland needs. The majority of these (about 4,000 rights) fall in the prairie pothole region. An additional 2,000-3,000 water rights are related to reservoir ponds for waterfowl nesting, brooding, and rearing habitat throughout Montana, and to development and protection of springs and seeps. The Fish and Wildlife Service also has reserved water rights on several wildlife refuges in Montana and the Forest Service has reserved rights for securing favorable conditions of stream flow.

39. Pitman-Robertson and Dingell-Johnson Acts

40. State Comprehensive Outdoor Recreation Plans

41. Special Area Management Plans

42. Swampbuster

43. National Flood Insurance Program

B. State Agencies and Programs Involved in Wetlands

<u>Montana Department of Fish, Wildlife and Parks</u>

44. Montana Migratory Game Bird Stamp Program

This statewide program is funded by the sale of Montana Migratory Game Bird Stamps and associated art. About $200,000 per year is available for wetland development projects. The emphasis is on wetland habitat projects that will increase waterfowl production and brood survival. Sites with adequate nesting cover near the wetlands receive priority and typically, this includes large blocks of native or introduced grasses/legumes.

Important points about the program

- Emphasis is on shallow wetland creation and restoration.
- Program can cover up to 100 percent of construction costs and generally focuses on sites which allow the work to be completed at a cost of $1,000-$2,000 per wetland surface acre.
- Projects are constructed in areas with good adjacent upland nesting cover such as native rangeland or CRP enrolled acres.
- Focus is on providing additional habitat for waterfowl breeding or brood rearing, with additional benefits to other water birds and wildlife species.
- Eligible practices include restoring drained wetlands, constructing new reservoirs, repairing breached dams or damaged spillways, installing water control structures,

establishing suitable upland nesting cover, and working with landowners to implement managed grazing systems.
- Program generally requires reasonable public access controlled by the landowner.
- Persons interested in the program may contact a local FWP biologist or game warden.

45. Upland Gamebird Habitat Enhancement Program (DFWP)

The focus of the Upland Gamebird Habitat Enhancement Program is to establish and/or improve habitat for upland game birds. Funds for the program are derived from non-resident and resident upland game bird license sales.

46. Watchable Wildlife Program

47. Montana Stream Protection Act (124 permit for government entities)

The Montana Stream Protection Act requires that federal, state and local governmental entities (except irrigation districts) proposing projects disturbing the bed and banks of perennial Montana streams receive authorization (often called 124 permits) from DFWP. The Act does not specifically apply to disturbances to wetlands unless wetlands are found on or within the banks of perennial streams.

48. Pitman-Robertson and Dingell-Johnson acts

49. State Comprehensive Outdoor Recreation Plans

50. Land and Water Conservation Fund

<u>Montana Department of Environmental Quality</u>

51. Montana Wetlands Council

The Montana Wetlands Council serves as a forum to bring people together with divergent interests in wetlands to work together toward responsible wetland stewardship. Membership in the Council is open to anyone with an interest in wetlands issues, consisting of citizens, agency representatives, development and agricultural interests, industrial groups, consultants, and conservation groups. The Council's mailing list includes over 200 individuals and organizations. Council members volunteered to participate on work groups to address specific wetland issues, including education, data management, mitigation, classification and definition, policy, coordination, and regulatory requirements. The Council is developing and seeking public comment on a Conservation Strategy for Montana's Wetland's.

Section 401 of the Clean Water Act: Water Quality Certification

Section 401 of the Clean Water Act requires that federal permits or licenses (including 404 permits), that can result in discharges of pollutants to waters of the U.S., receive certification from the state (or EPA) that such discharges will not violate applicable water quality standards. In Montana, 404 permits receive 401 certification from DEQ, or from EPA within the boundaries of Indian reservations. DEQ is developing wetlands criteria and biological assessment protocols for water quality standards.

53. Nonpoint Source Pollution Prevention Program

Montana's Nonpoint Source Management Plan was initially approved by EPA in 1988 and updated in 1991. The state has concentrated its nonpoint source program on three major source categories: agriculture, mining, and forestry, and voluntary best management practices have been adopted for each of these primary source categories. The non-regulatory NPS program has emphasized watershed/development projects and educational activities. Montana receives federal funds each year to fund nonpoint source pollution prevention activities including wetland education and other wetland activities.

54. Storm Water Discharge Permits

55. Montana Pollution Discharge Elimination System

56. Short-term Exemption from Montana's Surface Water Quality Standards

57. Wetland Water Quality Standards

58. Comprehensive, Environmental, Response, Compensation and Liability Act (CERCLA)

59. Comprehensive Environmental Cleanup Act

60. Montana Strip and Underground Mine Reclamation Act

61. Major Facility Siting Act

62. Metal Mine Reclamation Act

<u>Montana Department of Natural Resources and Conservation</u>

63. Montana Flood Plain and Floodway Management Act

The Montana Flood Plain and Floodway Management Act (1971) authorized DNRC to delineate the 100 year floodway and floodplain of every watercourse in the state and to restrict the use of these designated areas to those uses that will not be seriously damaged or present a hazard to life if flooded. Both federal and state governments have established floodplain management measures, but local governments are responsible for administering the measures in most Montana communities.

Opportunities for Wetlands Protection:

- The Montana Floodplain and Floodway Management act prohibits fill, structures and excavations in floodways that would significantly obstruct or alter flood flows or increase the 100 year flood level. Restrictions in floodplain management programs can provide considerable protections for wetlands in floodways.
- Montana can require communities to exceed the minimum standards of the National Flood Insurance Program. Several states have done this through a variety of measures, such as accounting for future watershed conditions in mapping flood plains, defining more restrictive floodways (ie. a zero rise floodway), and prohibiting a broader range of activities than the federal program.

- Floodplain managers can promulgate combined ordinances for flood loss reduction and wetland protection. State and local watershed management plans can incorporate flood loss reduction and wetlands protection goals and objectives.

64. Montana Water Use Act, Water Right Permit

Water rights are legally defined allocations of water for specific uses. Water rights in Montana are guided by the prior appropriation doctrine in which water rights are not tied to ownership of riparian lands, but are owned by the state, which then appropriates the water to users. Under the principle, first in time, first in right , the first person to use water for a beneficial use establishes the first right, the second person could establish a right for a beneficial use of the water that was left, and so on. In Montana the passage of the Montana Water Use Act in 1973 was the most comprehensive change in Montana's water right laws in the state's history and included a provision to reserve water to maintain minimum streamflows to protect environmental values, which can include protecting adjacent wetlands.

Opportunities for Wetlands Protection:

- Montana's water rights law includes fish and wildlife and recreation as beneficial uses, allowing water rights permits to be obtained for these purposes. DFWP holds several water rights to protect state wildlife management areas, including a water right for Black Butte Swamp to protect marshy habitat important for bears. This avenue could be pursued for other important wetlands with fish, wildlife and recreation benefits.
- In many states, water rights are being transferred from consumptive uses to wetlands protection. In Nevada, for example, The Nature Conservancy and the U.S. Fish and Wildlife Service are acquiring irrigation water rights and transferring these rights to provide water to maintain the wetlands in the Stillwater National Wildlife Refuge.

65. Montana Land-Use License or Easement on Navigable Waters
66. Montana Streamside Management Zone Law

<u>Montana Department of Transportation</u>

67. Wetland Mitigation

<u>Montana Department of Agriculture</u>

68. Montana Pesticide Act
69. Montana Agricultural Chemical Ground Water Protection Act

<u>Montana State Library System</u>

70. Natural Resource Water Information System
71. Montana Wetland Information Clearinghouse and Metadata
72. Natural Heritage Program

<u>Montana State University</u>

73. Extension Service - Forest Stewardship Program (FSP)

<u>University of Montana</u>

74. Riparian and Wetland Research Program
75. Montana Riparian and Wetlands Association (MRWA)

MWRA is a scientific-based cooperative comprising agencies and private organizations throughout Montana. The cooperative is housed at the University of Montana's School of Forestry and was formed in 1986. The Montana Riparian and Wetland Association goals are:

- Complete the statewide riparian and wetland habitat type classification.
- Refine and expand management information for riparian and wetland areas.
- Provide training and continuing education in identification, function and management of riparian and wetland ecosystems.
- Refine and expand knowledge on successional relationships and vegetation-physical site relationships for riparian and wetland habitat types.
- Continue development of a coordinated riparian and wetland data base.
- Develop a better understanding of the cumulative effects of land use management activities on riparian and wetland ecosystems.
- Inform private landowners of the benefits of properly functioning riparian and wetland areas, and sources of financial and technical assistance available to them.

76. Hydrogeomorphic Assessment Development
77. Yellow Bay Biological Station

<u>Environmental Quality Council</u>

78. Montana Environmental Policy Act

C. Tribal Programs

79. Blackfeet Aquatic Lands Protection Ordinance
80. Blackfeet Wetlands Stewardship Program
81. Wetland Conservation Strategy for the Flathead Indian Reservation
82. Chippewa Cree Wetlands Conservation Plan
83. Crow Wetlands Program
84. Northern Cheyenne Wetlands Protection Program

D. Local Government Programs

85. City and County Governments

City and county rules and regulations such as comprehensive plans and zoning ordinances and special districts can be used for wetland protection. Districts are local government entities that have the power to raise revenue for the purpose of serving the public, have an elected or appointed governing body and receive local, state or federal financial assistance. Since there are fewer than 100 incorporated municipalities in Montana, counties rely on districts to provide needed services. Districts have tremendous flexibility in providing water quality protection and preservation to wetlands in their county. Montana districts with wetland applications include: county sewer and water districts, conservation districts, county weed control districts, drainage districts, irrigation districts, local water quality protection districts, mosquito control districts, soil conservation districts, and water conservancy districts.

86. Local Water Quality Protection Districts

The Montana Local Water Quality District Act (1991) authorizes counties to establish districts to protect, preserve, and improve the quality of surface and groundwater. The districts operate with a board of directors and funding from an annual fee on all property using water or producing waste within the district. Montana currently has four districts and four other counties are in the preliminary stages of forming districts. Local Water Quality Protection Districts each have unique water quality programs and work cooperatively with the DEQ in administering the Montana Water Quality Act. One district is evaluating the possibility of using wetlands for storm water treatment.

87. County Soil and Water Conservation Districts

Conservation districts grew form public concern for the condition of natural resources in the 1930s. Today, Montana's 58 conservation districts provide local citizens with an opportunity to shape resource planning in their areas. Conservation districts administer the Natural Streambed and Land Preservation Act (310 permit for nongovernmental entities). The Natural Streambed and Land Preservation Act (or 310 permit law as it is commonly known), requires that non-governmental entities proposing projects disturbing the bed and banks of perennial Montana streams receive authorization from County Soil and Water Conservation Districts. The Act does not specifically apply to disturbances to wetlands unless wetlands are found on or within the banks of perennial streams.

88. Water and Sewer Districts
89. Montana Salinity Control Association
90. Locally led conservation efforts

E. Other Organizations and Programs

91. Montana Watercourse
92. Montana Wetlands Trust
93. Montana Riparian and Wetlands Association
94. Montana Watershed Coordination Council
95. Montana Water Resources Center
96. Ducks Unlimited
97. National Wildlife Federation
98. Audubon Society
99. Trout Unlimited
100. Nature Conservancy
101. Montana Land Reliance
102. Five Valleys Land Trust
103. Flathead Land Trust
104. Gallatin Valley Land Trust
105. Rocky Mountain Elk Foundation
106. Flathead Basin Commission

others.

Appendix F. Wetlands on Agricultural Land

The Natural Resources Conservation Service (NRCS) shares responsibility for wetlands protection with the Army Corps of Engineers and the Environmental Protection Agency because the Food Security Act of 1985 (FSA) tied conservation measures to farm program eligibility. The Act requires farmers to perform certain conservation measures in order to be eligible for government funding. Wetland conservation provisions under the 1985 FSA are commonly referred to as Swampbuster provisions. The U.S. Fish and Wildlife Service provides technical assistance to these agencies.

Several changes have been made to the wetland conservation provisions over the last decade. The 1996 Farm Bill gives farmers more flexibility in wetland conservation compliance while continuing to support wetland protection. The new provisions build on the conservation gains made by landowners over the past decade. They simplify existing programs and create new programs to address high priority environmental and wetland protection goals. Several key changes made in the 1996 Farm Bill include:

-Expanded the list of acceptable areas where mitigation can best be used and provide more opportunities for landowners to work with NRCS, conservation districts or others to choose the best ways to mitigate wetlands.

-Increased the available options for mitigation including restoration, enhancement, or creation, as long as wetland functions and values are maintained.

-Encourages effective and timely use of minimal effect determinations which identify practices that have a minimal effect on the environment and puts these mitigation practices on a fast track.

- Stipulates that when wetlands are converted for agricultural production, they will be accepted under Farm Bill provisions, if adequately mitigated.

-Revises the concept of abandonment to ensure that as long as land is used for agriculture, a certified Prior Converted cropland designation remains in effect. When done under a plan approved by the NRCS, landowners with Farmed Wetlands (FW) and Farmed Wetlands Pasture (FWP) may allow an area to revert to wetland status and convert back to an FW or FWP for agricultural purposes without violating the Swampbuster provisions.

-Requires wetland determinations to be certified by the NRCS. Previous wetland determinations will be certified to verify their accuracy. A certified wetland determination will remain in effect as long as the land is used for agricultural purposes or until the owner or operator requests a review from the Secretary of Agriculture.

-Establishes a pilot program for wetland mitigation to allow USDA to assess how well mitigation banking works for agriculture.

Complete discussions of the 1985 The Food Security Act, the 1996 Farm Bill, and related information are available at local NRCS offices.

Appendix G. Wetland Classification and Assessment

Background

Wetland classification is intended to define different type of wetlands, while wetland assessments are intended to evaluate the functions of a wetland. Several classification and assessment methods exist or are being developed and refined. These have been developed for different situations and/or different uses.

The purpose of the assessment is to determine the "importance" of a wetland and then the potential need to protect, preserve, or maintain such importance if the wetland was developed or modified in some way. This "importance" has typically been described in terms of functions and values. The functions of a wetland are those self-sustaining properties of a wetland that exist in the absence of society. Functions can result from both living and non-living components of a specific wetland. Functions relate to the ecological significance of wetland properties without regard to subjective human values or without a human value being placed upon that function. Values are benefits that derive from one or more functions and the physical characteristics associated with a wetland. The value of a particular wetland function is based on human judgement of the worth, merit, quality or importance attributed to those functions.

The following are some classification and assessment methods that are being used or developed for Montana.

Hydrogeomorphic Functional Assessment (HGMA)

The HGMA method is being developed by the Corps of Engineers in conjunction with other federal agencies and the academic community. This approach is based upon a hydrogeomorphic classification of wetlands to assess wetland functions (Brinson). It intends to satisfy technical and regulatory requirements, and a variety of other local government planning and management situations requiring assessment of wetland functions. Federal regulations require the use of the HGMA for all 404 permits where the HGMA methods have been developed at the regional level. However, at this time, no regional guidebooks are complete. Currently, two HGMA Guidebooks are being developed in Montana for wetland assessments one for montane pothole and one for riverine wetlands for the Northern Rockies Intermountain West Region. These guidebooks are due out in the fall of 1997 and 1998.

Proper Functioning Conditioning (PFC)

The Bureau of Land Management and the Forest Service are required to put all riparian and wetland areas in proper functioning condition using the principles in Riparian Area Management, Process for Assessing Proper Functioning Condition on running water (lotic) areas and for still water (lentic) areas. Areas are classified as properly functioning, functional-at risk, nonfunctioning or unknown. The minimum requirement for assessment is a qualitative, rapid assessment using a checklist.

A quantified, more detailed procedure has been developed by BLM and the Montana Riparian and Wetland Association for running water (lotic), still water (lentic) and large river systems. It's procedure is also being used by the Bureau of Reclamation, Bureau of Indian Affairs, various Tribes, Fish and Wildlife Service, National Park Service, National Resource Conservation Service, and private companies. Field data are collected and the communities and habitat types are determined using Classification and Management of Montana's Riparian and

Wetland Sites (Hansen et al. 1995). The data are used in a rating system and functioning condition of the area is calculated. The database is available on internet (HTTP//:www.rwrp.umt.edu).

Cowardin Classification and the National Wetland Inventory (NWI)

In 1974, the U..S. Fish and Wildlife Service was directed to design and conduct the National Wetlands Inventory to establish a wetland database for the entire nation. This mandate came from a growing awareness that wetlands provide many ecological and social values, and that wetlands are disappearing at a rapid but poorly documented rate. NWI was designed with two goals in mind: one, classify and map the nation's wetlands, and two, develop statistics with which to evaluate wetland status and trends. NWI is based on the Classification of Wetlands and Deepwater Habitats of the United States by Cowardin et al. 1979. This classification is intended to describe ecological taxa, arrange them in a system useful to resource managers, furnish units for mapping, and provide uniformity of concepts and terms.

Montana Department of Transportation Wetland Field Evaluation

Other methods have been developed to assess wetland factors in Montana. The Montana Department of Transportation and other agencies have developed a Wetland Field Evaluation Form for reviewing proposed transportation projects. This method is used to evaluate small projects that have no more than minimal adverse impacts to wetland resources.

Appendix H. Regulatory Overview

Background

Wetland laws developed through the legislative processes of state and federal government express the broad values that society associates with wetlands. Many of these laws are written in general terms describing society's goals and certain ideals that are intended to be pursued through wetlands legislation. Regulations, which describe specific practices, requirements and priorities, are developed by government agencies are responsible for implementing wetland laws. Without such regulation, wetlands laws would lack the specific ability to implement society's values.

Federal, state, and local governments all have regulatory programs that affect both publicly and privately owned wetlands. Some programs focus directly on wetlands (such as the 404 Dredge and Fill Permit Program), while other programs focus on activities that can potentially alter wetlands (such as dam construction) or have indirect effects on wetlands. Wetlands protection is only a small part of the 404 Program.

The principal federal regulatory program for wetland protection used in Montana is the Dredge and Fill Permit Program, authorized under Section 404 of the Clean Water Act (CWA). The state has no direct wetland protection laws. Section 401 of the Clean Water Act requires that 404 permits, which can result in discharges of pollutants to waters of the U.S., receive certification from the state (or EPA for lands within Indian reservations) that such discharges will not violate applicable water quality standards.

Federal Regulatory Permit Responsibilities and Process

Federal regulations cited in the Code of Federal Regulations form the foundation of the

permit procedures implemented by the federal agencies. Memoranda of Agreement or Understanding also have been developed which establish policies and procedures the agencies are to follow to improve cooperation and coordination, promote efficiency, and reduce duplication by their administrative, fiscal, material, and personnel resources.

The typical permit review process generally involves preapplication discussions initiated by an applicant or the Corps of Engineers (COE). Technical assistance and regulatory guidance is provided by other federal agencies including the EPA, USFWS, and NRCS. The Montana DEQ may provide comment at this time on issues regarding Section 401 certification, or may elect to wait until a public notice has been issued during the public review portion of the permit process. Other federal, tribal, state, or local government programs may be included in the preapplication discussions if warranted. Otherwise, the other interests offer their comments during the public review process. COE and EPA have encouraged coordinated site reviews during the preapplication phase to initiate dialogue pertinent to the affects on the aquatic environment, and expedite the permit process.

Most permit decisions are made by the COE at the District Engineer's Office. However, in cases where either EPA or USFWS requests denial of a permit due to the presence of an Aquatic Resource of National Importance that they have determined would be adversely effected by the proposed activities, the decision is elevated to the Division Engineer or Director or Civil Works Office.

The Clean Water Act (CWA) provides enforcement authority and various remedies to penalize violators at the federal level, as well as those provided under state, tribal, and local government laws that pertain to wetland protection. However, since most regulatory offices are not sufficiently staffed to pursue punitive actions or other nonvoluntary compliance enforcement remedies, the preferred alternative has been to encourage voluntary compliance initially, striving to restore or reclaim affected areas through immediate and indirect enforcement means that are in the best interests of the aquatic environment and within the constraints of the regulatory staff.

The regulatory agencies have focused their resources on efforts that address wetland issues before they become problems, including:

1. encouraging or requiring the use of best management practices,
2. preapplication conferences,
3. land use planning workshops,
4. project design modifications, and
5. selection of more practicable alternatives.

Regulatory agencies recognize that statutory, policy, and guidance associated with federal authority remains unfamiliar to many. The agencies have responded by attempting to improve the dissemination of information and to support educational opportunities that promote a better understanding of regulatory implementation of wetland protection programs in Montana.

The Clean Water Act plays a significant role in regulating impacts to wetlands at the national level. Section 404 of the Act directs COE, in cooperation with EPA, to administer a 404 Regulatory Program for permitting the discharge of dredged or fill materials into waters of the United States, which by definition includes wetlands. Applications for a permit to discharge dredged or fill material into waters of the United States undergo a public interest review that includes assessing the impact of a proposed project on wetland functions and other public interest related factors. Results of the assessment are one of the factors considered in making the 404 permit decision.

A variety of methods have been developed over the past 15 years to assess wetland functions. However, none have received widespread use or acceptance in the 404 Regulatory Program because of failure to satisfy one or more technical or program requirements. Those requirements include applicability in a wide geographic area, the ability to assess a variety of wetland types and functions, and the ability to assess functions accurately and efficiently with the limited time and resources available.

History of Regulatory Wetland Definitions

The enactment of the Federal Water Pollution Control Act in 1956, with the subsequent amendments in 1972 gave COE and EPA authority to regulate pollution of waters in the United States. The coverage of the 1972 act extended to wetlands but was narrowly construed at first and extended to only approximately 15 percent of the total wetland acres in the U.S. Between 1972 and 1977, judicial decisions greatly broadened the coverage of the statue and created for the first time a need for a regulatory definition of wetlands and for federal conventions by which a definition could be applied. The COE finalized a regulatory definition in 1977, but delegated to its district offices the development of procedures for identifying and delineating wetlands. Section 404 of the 1977 Federal Water Pollution Control Act amendments (Clean Water Act) confirmed the national commitment to regulation of wetlands, and broad federal application of the 1977 act to wetlands was upheld judicially in 1985.

Within the CWA amendments, Congress established policy that recognizes, preserves and protects the primary responsibilities and rights of states, and requires consultation with EPA in the exercise of its authority under the CWA. Furthermore, Congress established a procedure to transfer the federal permit authority to any state desiring to administer its own Section 404 permit program. Michigan and New Jersey currently are the only states with CWA Section 404 authority.

At the same time the CWA was granting COE and EPA authority to implement broader application of wetland protection, the Food Security Act established a separate regulatory definition for wetlands which the Department of Agriculture was instructed to apply to agricultural lands. Other federal statutes also included language intended to protect or preserve certain specific resources related to or dependent upon wetland, and provided their own definition for wetlands. (figure 1).[box referencing other statutes], [include FWS, FHWA,] [insert current accepted definition]

Foreseeing the need for greater national uniformity in the identification and delineation of wetlands, the COE issued in 1987 a national delineation manual ("1987 Corps manual). Subsequently, COE collaborated with the USFWS, EPA and USDA in the preparation of a revised manual, which was released in 1989 ("1989 interagency manual"). The 1989 manual was strongly criticized, however, by individuals and groups who perceived it as being excessively inclined toward the regulation of lands that might not be properly classified as wetlands. A second attempt at the creation of a revised manual was initiated by the Bush administration in 1991 ("1991 proposed revisions"). This document was criticized for excluding many wetlands from regulatory coverage, and was not implemented. Thus COE and EPA continued to use the 1987 Corps manual. In the meantime, the Soil Conservation Service (now NRCS) was authorized by the 1985 Food Security Act to prepare and implement a separate delineation manual ("1985 Food Security Act manual") for use on agricultural land.

The preparation and withdrawal of the 1989 interagency manual and the 1991 proposed

revisions, and the adoption of a separate manual designated specifically for agricultural lands, created confusion and uncertainty about the scientific and technical validity of federal regulatory practice in the identification and delineation of wetlands. As a result, Congress requested in 1993 that the National Academy of Sciences provide, through a committee formed by the National Research Council (NRC), an assessment of the adequacy and validity of wetland definitions, the basis for applying definitions through delineation manuals, present knowledge of the structure and function of wetlands, and regional variation among wetlands.

The NRC committee reached broad consensus on these issues and released its report to Congress in May 1995. The report was a reference definition for wetlands that sets the stage for a fresh look at existing regulatory definitions and for reconsideration of the confusion surrounding parameters, criteria, and indicators. In addition, the committee also offered an overview of wetland functions as they relate to the protection of wetlands. Many of the conclusions and recommendations underscore the committee's confidence in the fundamental soundness of current regulatory practice for characterizing and delineating wetlands.

Improvements in the scientific understanding of wetlands since 1987 and refinement of regulatory practice through experience over a decade of intensive wetland regulation suggest that a new federal delineation manual should be prepared for common use by all federal agencies involved in the regulation of wetlands. The new manual should draw freely from the strengths of each of the existing manuals, but should not be identical to any of the present manuals. A new manual should incorporate some changes in present practice and some solutions to past problems of regulatory practice, as well as an increased emphasis on regionalization within a framework of national standards. In some instances, the lack of critical information also demonstrates an urgent need for study of selected wetland characteristics. However, until such information is developed, the 1987 COE manual is used by all federal agencies.

Appendix I. Wetland Mitigation

Background

Mitigation is a term that has evolved from the wetland regulatory agencies and wetland legislation. The term as used in regards to wetlands refers to the requirement to restore, replace, reconstruct, rebuild, establish, create, compensate, or reimburse for wetlands that would be adversely affected by human activity. The Council on Environmental Quality has defined mitigation to include:

(a) avoidance of the impacts altogether by not taking a certain action or part of an action;

(b) minimizing impacts by:

(1) limiting the degree or magnitude of the action and its implementation;

(2) rectifying the impact by repairing, rehabilitating, or restoring the affected environment; or

(3) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and

(c) compensating for the impact by replacing or providing substitute resources or environments.

Regulations of both COE and EPA apply a sequencing approach to the above types of mitigation to avoid, minimize, and compensate in a that order. Mitigation can be accomplished by application of any one of or a combination of avoidance, minimization and/or compensation in the proper order to be in compliance with federal regulations. COE and EPA entered a Memorandum

of Agreement to jointly implement the sequencing regulations.

Eliminating the possibility of adverse impacts through avoidance of the wetland is applied as a first step and is accomplished by locating or designing the project such that it does not affect the wetland. Minimization of the adverse impacts can be accomplished by designing project features or modifying the project to result in less adverse impact to the wetland. Compensation is used as the last measure and refers to the requirement to create (from uplands), restore (from a site that was once wetland) or enhance existing wetlands to compensate or make up for adverse impacts caused by the project. Compensatory mitigation should be used only when the impacts cannot be reduced to a "minimal" level using avoidance or minimization forms of mitigation.

Actions for minimizing the adverse effects of discharge or fill into wetlands are given in federal guidelines and state that interpretation of what is considered "minimal" is left to the discretion of the COE District Engineer. What is considered "minimal" can vary from state to state, county to county, watershed to watershed. The factors used in determining what is minimal are based upon the environmental setting of the District and the project.

Sequencing

Sequencing is required under the Clean Water Act and entails following the order below when siting a project and reviewing a permit application for a proposed action.

(1) Avoidance**.** Avoid wetland impacts to the maximum practical extent. Can the proposed project be altered to avoid the expected impact? For example, can the project be designed to avoid disturbance to wetlands?

(2) Impact minimization. Impacts cannot be avoided. Can the area of impact be reduced? Where avoidance is impossible or impractical, it might be possible to modify a project to lessen the wetland impacts.

(3) Mitigation in-kind, on-site. Mitigation is required with land set aside on the project site for wetland restoration and/or creation. The wetland being disturbed must be replaced with wetland of the same type which must function the same as the lost wetland.

(4) Mitigation in-kind, off-site. Mitigation is required but will be allowed to take place at a site other than the one being disturbed. The disturbed wetland must be replaced elsewhere.

(5) Mitigation out-of-kind, on-site. Mitigation is required to take place on the project site, but the restored or created wetland does not have to be the ecological equivalent to the one disturbed. For example, a wet meadow may be filled and mitigated on-site by the creation of open-water habitat with associated fringe wetlands.

(6) Mitigation out-of-kind, off-site. Mitigation is required and is allowed off-site, but the restored or created wetland does not have to be the ecological equivalent to the one disturbed. An example of this type of wetland mitigation is the wetland banking system.

Modes of Mitigation

In addition to the above sequence, the modes of mitigation preferred by EPA and COE are discussed below.

(1) Wetland restoration is the rehabilitation of a former wetland that was damaged or lost in the past, usually by filling or draining. Restoring these historic wetlands often is as simple as restoring the original hydrology by destroying or removing the drain tile. Restored wetlands generally come close to functioning as natural wetlands and are the most successful and desirable - form of mitigation.

(2) Wetland creation is conversion of a non-wetland area into a wetland. Such conversion can occur only if topography and hydrology are suitable. Wetlands can be created by impounding water or excavating surface soils to a level below the water table. Wetland creation tends to be most successful when it is done next to existing water bodies because the necessary hydrologic conditions are easy to establish and revegetation occurs quickly.
(3) Wetland enhancement is the improvement, maintenance, and management of existing wetlands to improve their ecological functions. No additional wetland is created but the ecological function of an existing wetland is improved. The goals of enhancement can include improved wildlife habitat, education opportunities, increased flood storage capacity, and greater diversity of plants and animals.
(4) Wetland preservation is a mitigation alternative that can be used in exceptional cases, for instance preserving a unique, high quality wetland in perpetuity can in some cases be an appropriate form of mitigation for the loss of wetlands through permited actions elsewhere. Wetland preservation is normally done in conjunction with other forms of mitigation**.**

Appendix J. Wetland Strategy Implementation Chart

To be completed based on public involvement.